

# MANUFACTURERS LIBRARY RECEIVED SEP 18 1914 U. S. Department of Agriculture

## RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,  
Mining, Contracting, Engineering, Building, and General  
Business Interests of the South and Southwest

Vol 66  
No. 11

ESTABLISHED 1882

\$4.00 Per Year  
Single Copy 15 Cents

### COURAGE IS THE SOUTH'S CREED

By PRESIDENT FAIRFAX HARRISON of the Southern Railway.

THE history of the South in the last forty years has been one of self-help, and the men who have made the industrial South of today are still in the saddle. I believe that they are able to meet this crisis themselves. Though we are undoubtedly entitled to rely upon, and will have the co-operation, of all of the agencies of government, Federal or State, to which freemen should look in emergency, we are being tempted by the suggestion that government, Federal or State, should do more for us than it has ever done for anyone before. We have become so used to the principle that government shall interfere in business for the regulation of it that some of us seem to have forgotten that justifiable regulation is a treatment of a disease and not a habit of nutrition.

The Southern Railway Company and the Companies associated with it are going ahead with undiminished vigor to accomplish the improvements for which capital has been provided and is in hand, and which have been found to be necessary to enable us to take care of the demands of the commerce of the South as we have experienced them, to say nothing of the future.

I believe in the South today and in the future of the South. Its record of achievement in the past is an earnest of what it will accomplish in the future. Those who have the vision to see and to believe in this must have the courage now to act on their belief.

BALTIMORE, SEPTEMBER 17, 1914



# CLINCHFIELD COAL

**CLEAN**



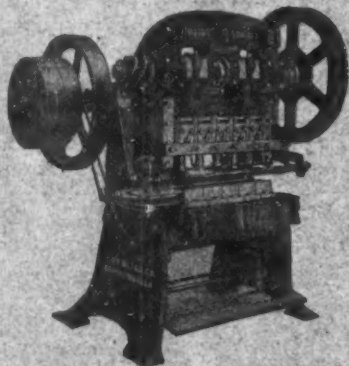
**LUMPY**

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MINED BY  
**Clinchfield Coal Corporation**  
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They produce with great speed and economy such articles as fancy bottle stoppers, ferrules, lamp sockets, varnish-can nozzles, lamp-burner shells, stove trimmings, harness-oil can tops, door knobs and similar articles requiring a series of operations. Write for details.

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*America's Leading Mill Builders*



## Single Sieve Purifiers

Improved location of fan, better method of handling air currents, solid panel doors with regulating valves, give the operator of N & M Co. Purifiers most complete control over the working air currents. Result—even better purifying than in the past. See Circular No. 1309. It's yours for the asking.

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Manufacturers of FLOUR AND CORN MILL MACHINERY, WOOD SPLIT AND IRON PULLEYS, RING OIL HANGERS, COUPLINGS, GEARINGS, COLLARS, Etc.

Shafting, Belting, Mill and Elevator Supplies in Stock  
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Completely Equipped Foundry and Machine Shop—Improved Cotton Handling Machinery, Steam and Gasoline Engines, Boilers, Ginning Machinery, Saw Mills and Woodworking Machinery, Gibbs Edgers, Gibbs Shingle Machines, Swing Saws, etc. Corn Mills, Brickmaking Machinery and Machinery Generally. Electric Light Plants for Municipalities, Hotels, Farms, Homes, etc. Storage Batteries.  
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Eureka Hose gives protection, it stands the crucial test of hard service.

Eureka Hose has a record of longer continually used hose than any hose on the market.

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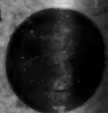
No. 52, 6 cubic feet; No. 54, 8 cubic feet;  
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**SYRACUSE CHILLED PLOW CO.**  
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If it is one that involves the choice of power transmission machinery, we are surely in the right position to give you the right answer.

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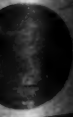
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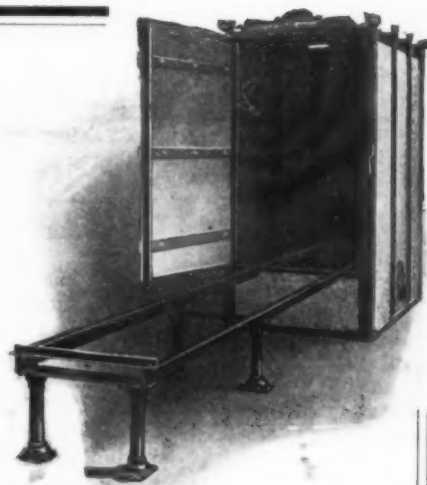
Inform yourself by writing to us about your proposed buildings. You will receive interesting suggestions without the slightest obligation on your part.

Kahn System Reinforced Concrete ensures fireproofness and permanence at low cost. It was used in the large fine buildings here illustrated, as well as in thousands of others. Other products include United Steel Sash for windows, Hy-Rib, Metal Lath, Highway Products, Waterproofings, Technical Paints, Specialties, etc.

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in your enameling, baking, bluing and drying departments? You're not unless your ovens have positive forced circulation, and work as rapidly and economically as the

## CRAWFORD Sectional Oven

If there is any doubt in your mind about the matter, let us know and we'll be glad to advise with you.

*Catalog M awaits your request.*

**THE OVEN EQUIPMENT &  
MANUFACTURING CO.**  
New Haven, Conn.

(54-48)

## The Architect who specifies the DUFFY DEVICE

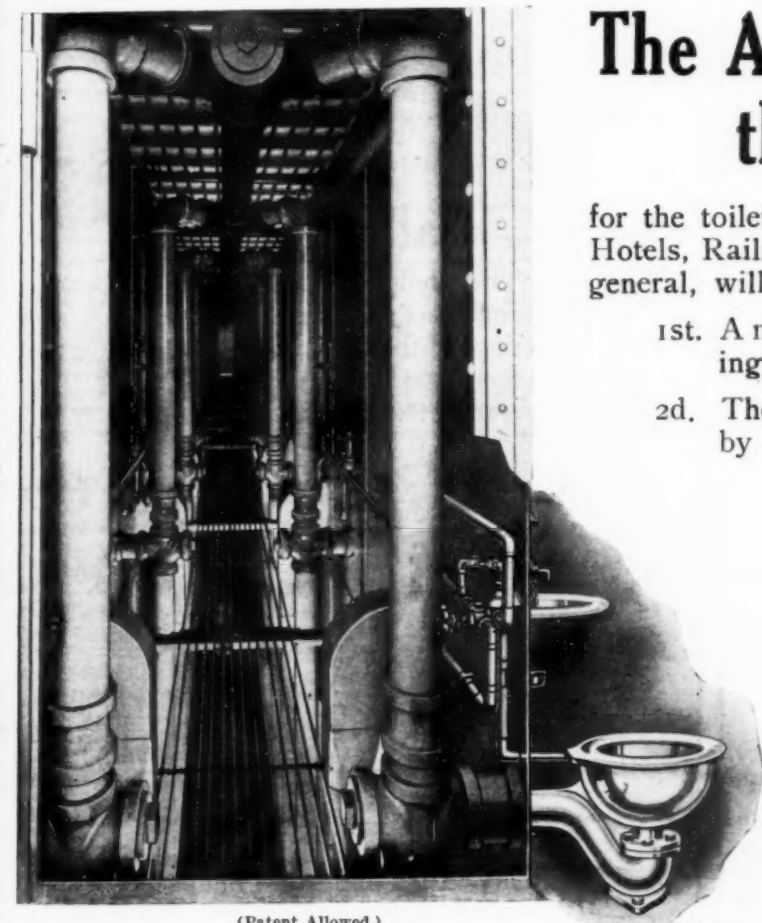
for the toilets of Jails, Asylums, Reformatories, Schools, Hotels, Railroad Stations or other places where their use is general, will find

- 1st. A minimum amount of water is used for flushing, which is important if there are meters.
- 2d. The flushing may be accomplished if necessary by an attendant, without entering the toilet.
- 3d. This is arranged for when the plant is installed, without extra piping or valve connections.

There are no pipes or valves or faucets in the toilet room. Just a wash basin, a toilet and a push button for each.

In cases of unruly prisoners, or insane patients, or general carelessness, the installation of the DUFFY PATENTED DEVICE saves annoyance and promotes sanitation by providing a means of flushing the toilets.

*For complete particulars address*



(Patent Allowed.)

Installation in Jefferson County (Ky.) Jail showing corridor at rear of cells from which toilets are flushed when necessary. 64 cells were equipped and the DUFFY PATENTED DEVICE was used.

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"The lowest price never yet bought the highest quality"

## This Is the Engine That Broke the World's Record

for lowest steam consumption for a non-condensing engine. If you are interested in economy and efficiency, you must be interested in the Lentz Engine, and remember this was a world's record.

# THE LENTZ ENGINE

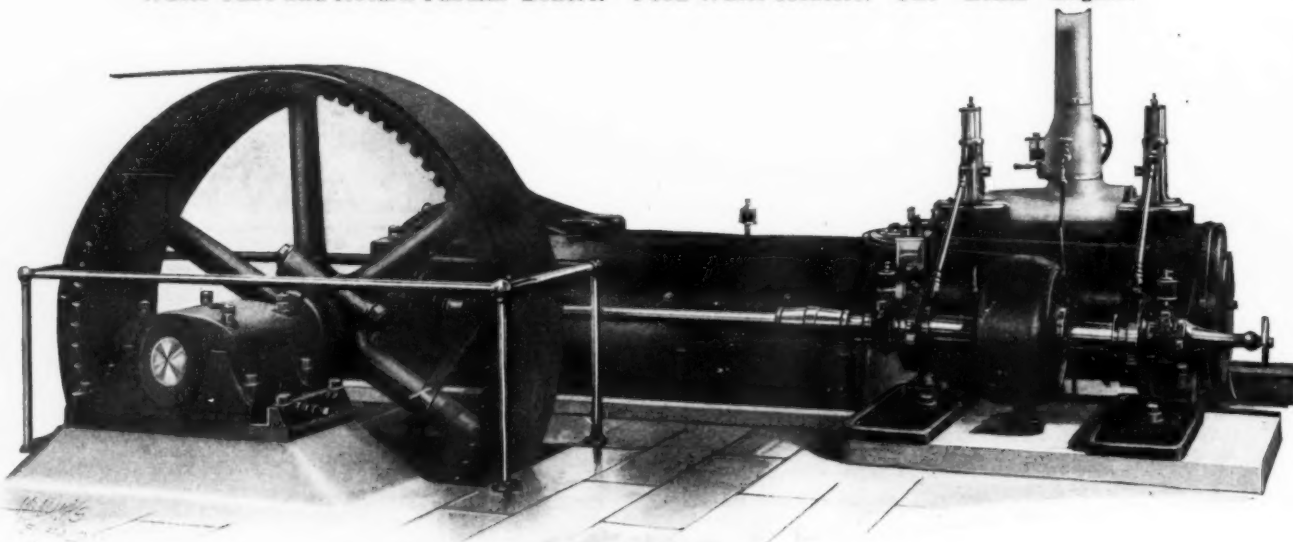
is installed wherever economy, efficiency and durability are considered. It is positively the fuel saver of the future. Now is the time for you to start economizing. Lentz Engines are modified and improved poppet valve Engines.

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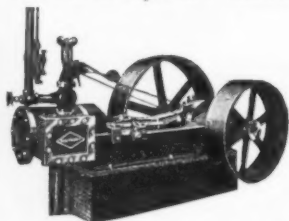
Builders of High Speed, Automatic and Center Crank Engines. Horizontal and Vertical Water Tube and Return Tubular Boilers. Feed Water Heaters. The "Lentz" Engine.



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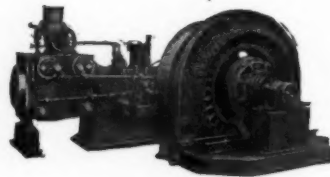
CHICAGO, 17th St. and Western Ave.

NEW YORK, Fulton Bldg., Hudson Terminal, 50 Church St.

Catalog No. 38

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BUILT IN VARIOUS TYPES:

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BECAUSE—

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AUTOMATIC SAFETY STOP



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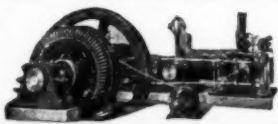
Gas Holders, coal gas or water gas apparatus, valves, tanks, and all auxiliary equipment.

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Boilers of All Styles and Sizes  
**MURRAY IRON WORKS COMPANY**  
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INCORPORATED FEBRUARY 1, 1870  
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Our prices and services will interest you. We ship anywhere.

**Jobbers of Electrical Supplies**

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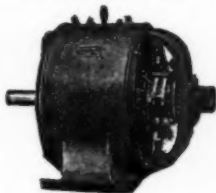
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They are built especially for use in factories. Speed variation to suit all conditions of work can be obtained by the movement of a handle.

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Steam Turbines  
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Cincinnati, O., First National Bank Bldg.  
Cleveland, O., Schofield Bldg.  
Dallas, Tex., Sumpter Bldg.  
Denver, Col., First National Bank Bldg.  
Detroit, Mich., Ford Bldg.  
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Kansas City, Mo., Waldheim Bldg.  
Los Angeles, Cal., Title Insurance Bldg.

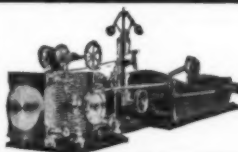
Milwaukee, Wis., West Allis Works.  
Minneapolis, Minn., Corn Exchange Bldg.  
New Orleans, La., Maison Blanche Bldg.  
New York, N. Y., 30 Church St.  
Philadelphia, Pa., Pennsylvania Bldg.  
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CORLISS ENGINES  
50 to 10,000 H. P.

81 Years of Experience

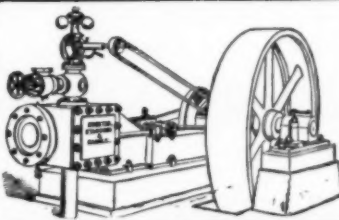
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**THE OHIO CORLISS ENGINE**  
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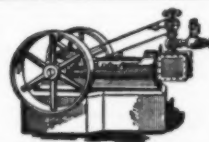


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We build a larger number of this type than anyone else in America. Shaft Governor Engines.

**BOILERS**—large finely equipped works

**The Houston Stanwood & Gamble Co.**  
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If you are looking for an engine to withstand heavy duty—an engine that is well adapted for the saw mill, oil mill and the cotton gin, or wherever an engine can be used to advantage—investigate the **Schofield Engine**.

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We also manufacture boilers, tanks, towers, smoke stacks, saw mills, and all kinds of machinery—mill supplies, pipe, galvanized roofing, etc.

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**TANKS and TOWERS  
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Specify these lamps always for lighting large spaces. They are constructed to give a wide distribution of brilliant light over wide areas.

The Type "W" Flame Arc Lamp is one of the most powerful lighting units known. Because of its penetrating light, continuity of service, economy of installation and maintenance, this efficient lamp is especially adapted to the illumination of Machine Shops, Factories, Stock Rooms, Shipping Rooms, Warehouses, Yards, Etc.

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THE CONTINENTAL FIBRE CO.,  
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Send us orders for Renewed Types

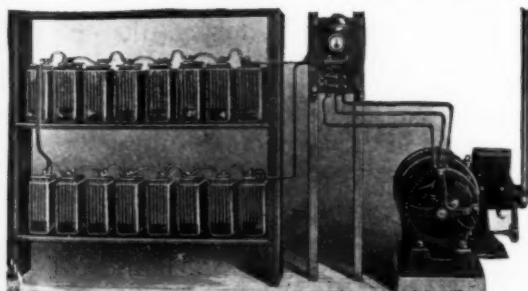
Guaranteed to Be Satisfactory

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NATIONAL LAMP WORKS OF GENERAL ELECTRIC CO.

128 Maple St., DANVERS, MASS.

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The demand for these Storage Battery Plants is increasing rapidly.

The owner recognizes the need of modern methods in lighting. Write for booklet.

The "Hyraz=Exide" Battery  
for Small Electric Lighting Plants  
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Feeder Cable Bare and Insulated  
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EXCEPTIONALLY LONG SPANS

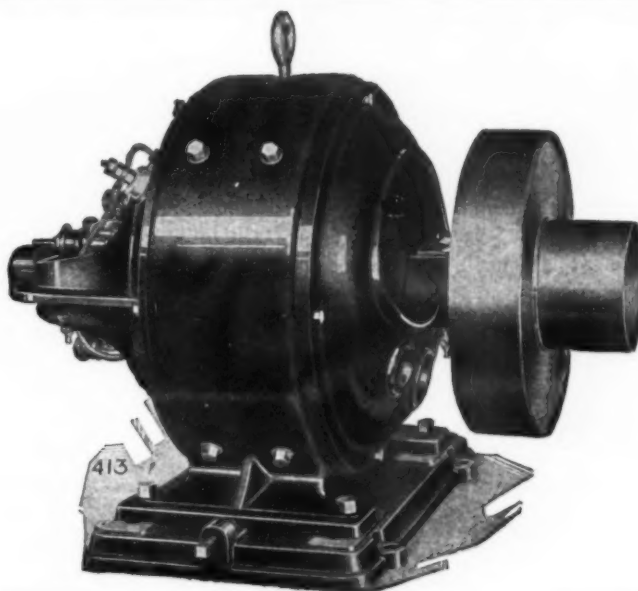
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## Robbins & Myers Generators For Small Isolated Plants

Robbins and Myers Direct-Current Generators are made in sizes ranging from 1/4 to 10 kilowatts capacity. They are adapted for lighting and power service in small factories, amusement parks, country homes, etc.

In addition to the standard voltage outfits, they are furnished in low voltages for charging storage batteries.

These generators can be supplied with plain or flywheel pulleys for belt drive or for direct connection to the driver.

The Robbins & Myers Co. has for 18 years specialized on the manufacture of motors and generators in the small sizes only. Every feature of these generators is adapted to meet the special requirements for which small generators are commonly used.

Bulletins on request

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## A STEAM PRODUCER VOGT WATER TUBE BOILER



As a satisfactory, efficient steam producer our water tube boiler stands out among the different makes of boilers throughout the country.

Complete combustion. Arrangement of tubes gives the water very rapid circulation. Steam capacity

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or any other problem within the province of steam engineering, it will pay you to get in touch with our Engineering Department—NOW.

Write for Bulletin

**THE GRISCOM-RUSSELL CO.**

Successor to The Grisco-Spencer Co., The Russell Engine Co., and The James Reilly Repair & Supply Co.,

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## THE OTIS TUBULAR FEED WATER HEATER



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A manhole in the sides enables you to easily and quickly wash the heater out with a hose, or blow out the refuse through the mud blow in the conical bottom. Each heater tested at 200 lbs. hydrostatic pressure before it is shipped.

Illustrated Catalogue on Request.

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with our Asbestos coverings. Thousands saving money by using them. We will give you a covering for your particular needs. Contract work a specialty. Let us explain.

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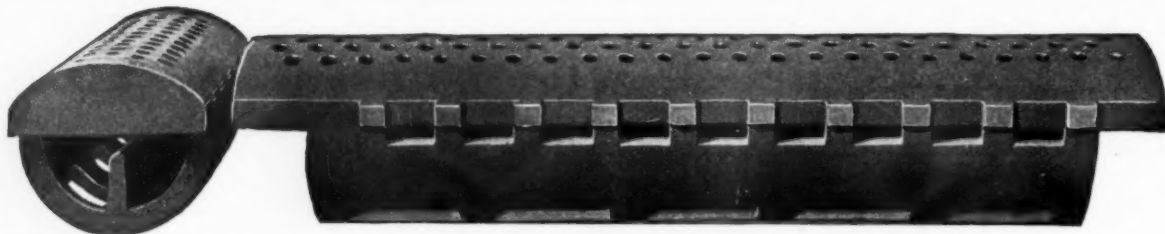
Successors to Southern Pipe Covering Co.

Asbestos Pipe Covering, Packing and Roofing

## Get Right Down to the Root of the Trouble in Your Power Plant

Is it caused by inferior grate bars? A large percentage of power plant troubles start this way. Put your plant at its greatest possible efficiency and run it more economically with

## THOMAS ELLIPTIC GRATE BARS



WOODWARD LUMBER COMPANY,

Augusta, Ga., July 22, 1912.

Thomas Grate Bar Co., Birmingham, Ala.:

Gentlemen—In reply to your favor of the 17th will say, as you know, we have been buying our grate bars from you for the last two years, using no other. We find them very satisfactory, so much so that we have ceased to listen to the arguments of the manufacturers of other grate bars.

Yours very truly,

WOODWARD LUMBER CO.,

(Signed) J. C. Lee, Pres.

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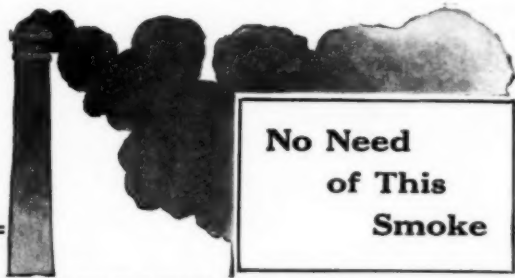
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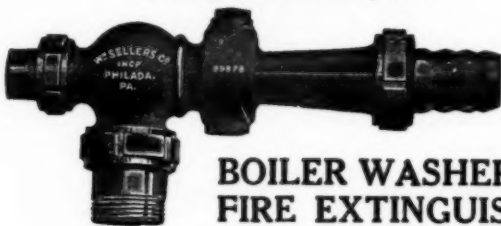
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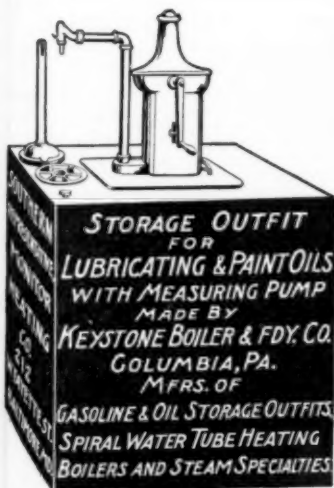
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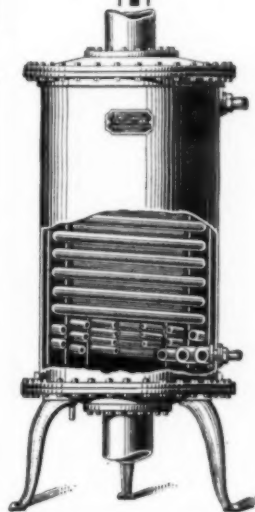


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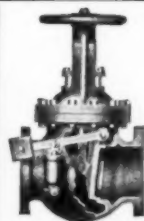
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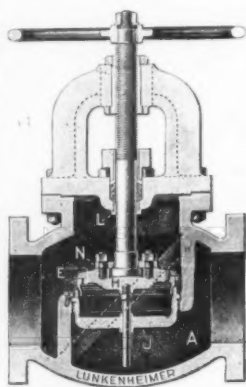
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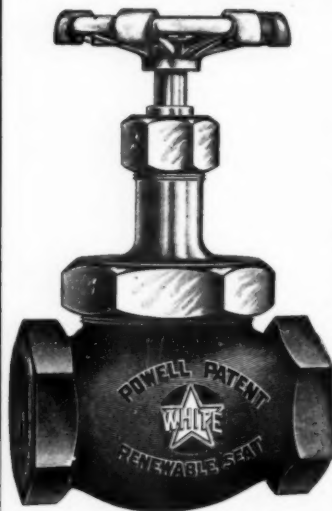
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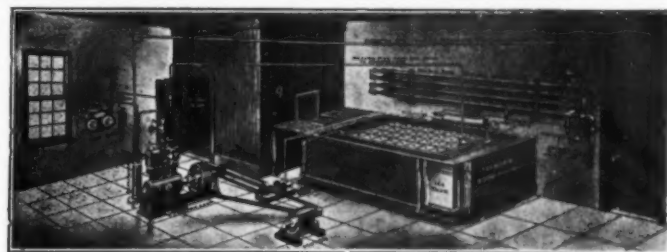
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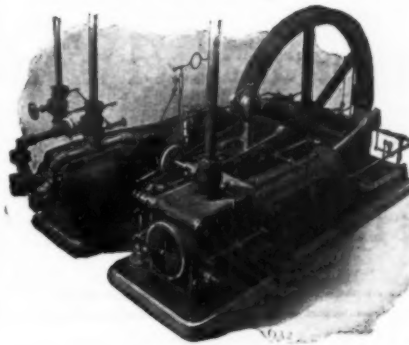
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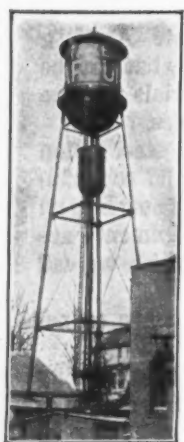
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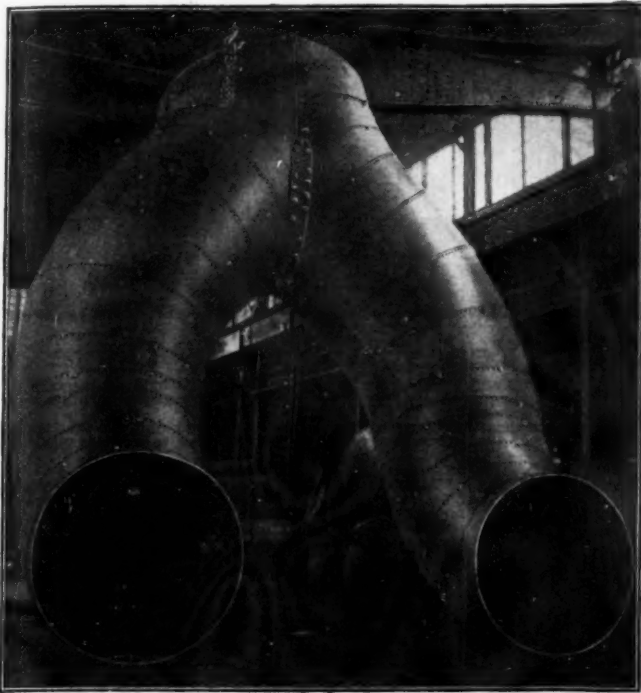
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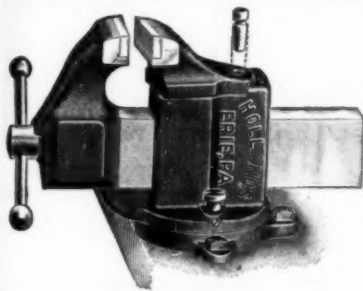
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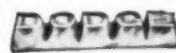
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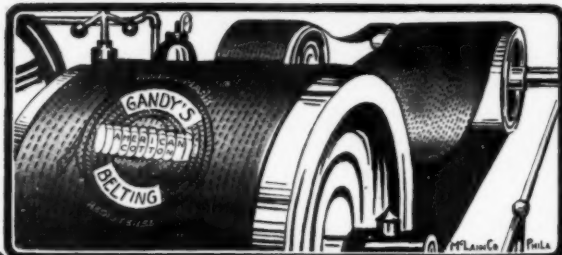
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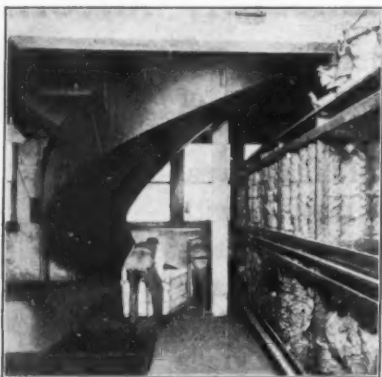


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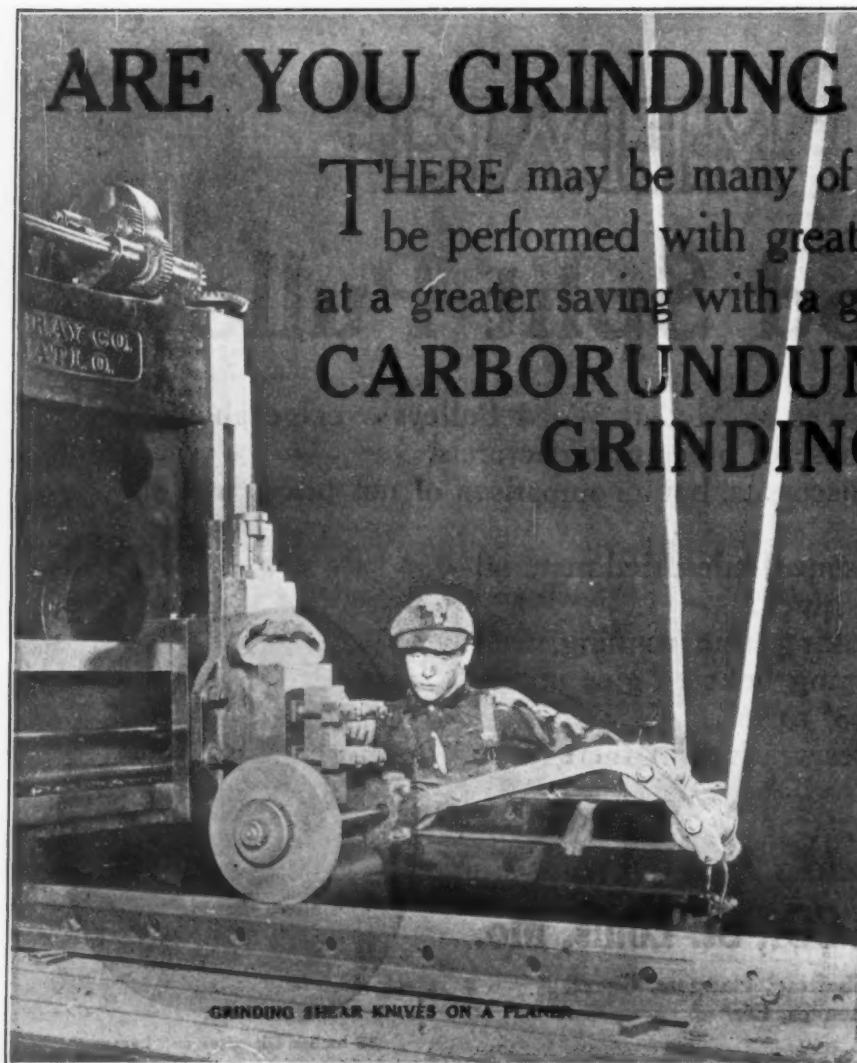
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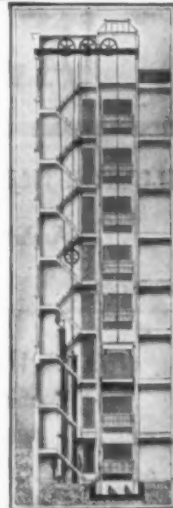


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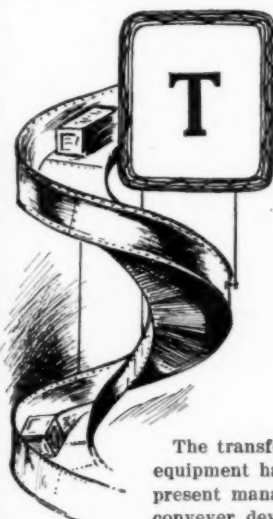
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This action was taken after members of the Board personally inspected the excellent Concrete Highways in Wayne County, Mich., and investigated their lasting and admirable quality, and extremely low cost of maintenance—a mere bagatelle.

Let us send you our booklet "CONCRETE HIGHWAYS." It is free for the asking. You may also have "Concrete in the Country," devoted to the use of Portland Cement on the farm.

**DIXIE PORTLAND CEMENT COMPANY**

James Building, CHATTANOOGA, TENN.

### If You Can't Get Potash Use LIME

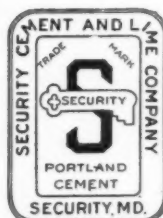
Your soil, in all probability, contains ample potash to maintain fertility for many years to come. All that is necessary is to release the potash from its insoluble combinations. Lime will do this. Therefore lime will accomplish the same result as potash fertilizers.



### Berkeley Hydrated Lime

(The Best Form)

We also manufacture Pulverized Limestone, Lump Lime and Ground Lime for agricultural and manufacturing purposes.



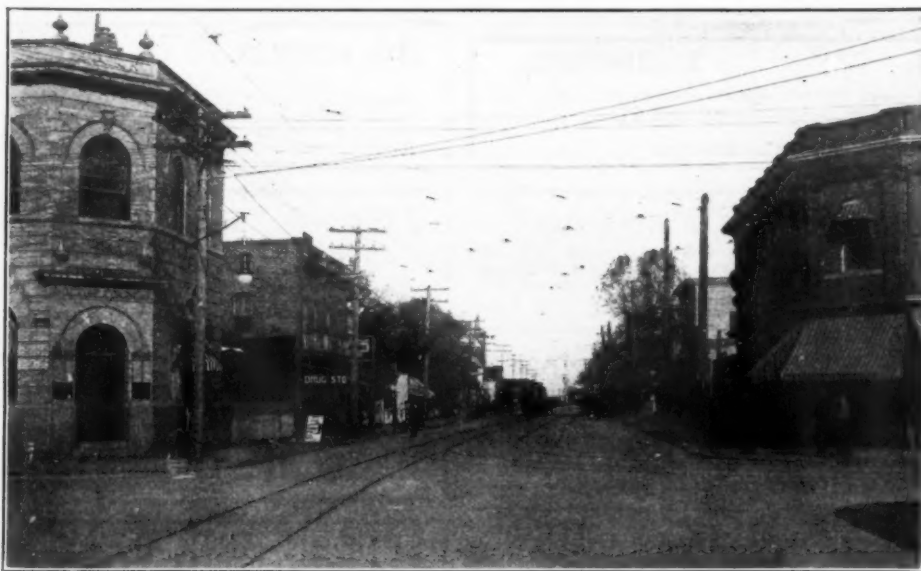
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City authorities state total repairs for past two years have not exceeded \$100.00 per year for keeping this street in first class condition.

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Photographed, 1913

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It has been used for the past fourteen years on the most important work done by the U. S. Government and railroads in the South.

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*The Standard of the South*

*Annual Capacity 1,000,000 Barrels*

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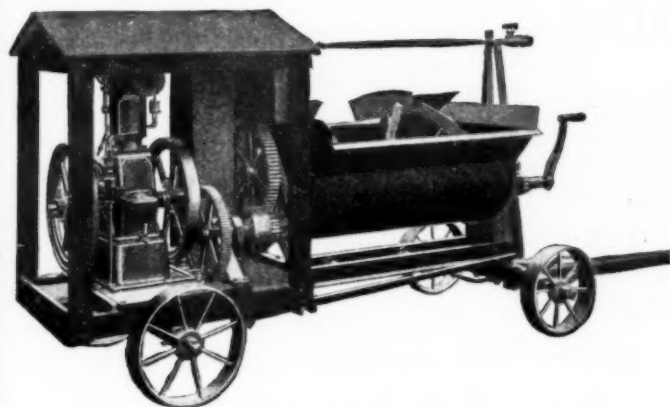
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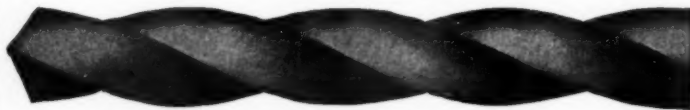
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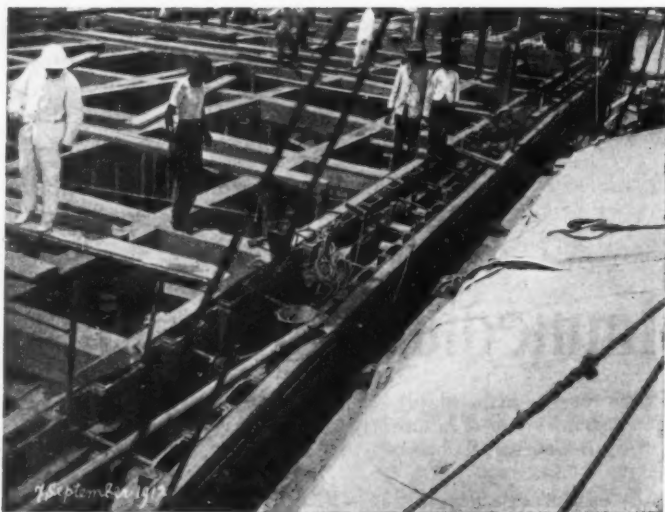
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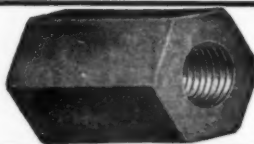
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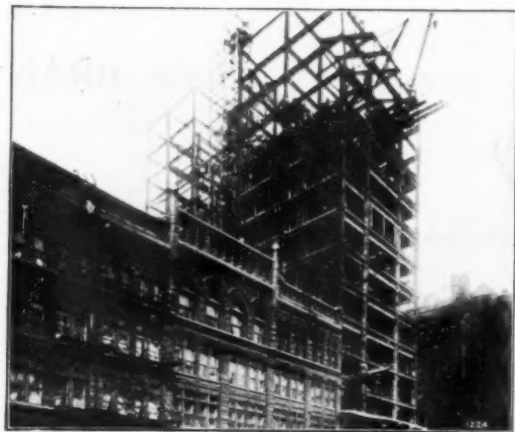
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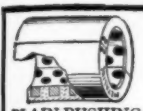
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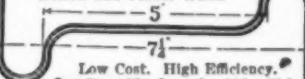
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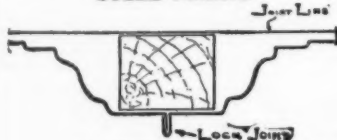
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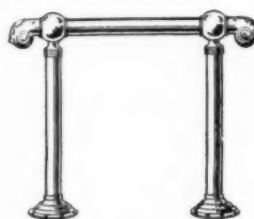
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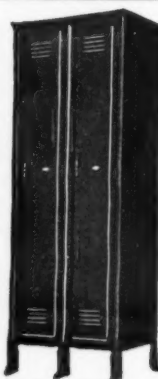
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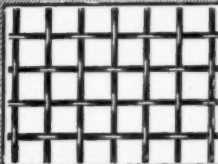
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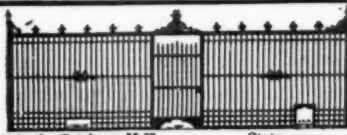
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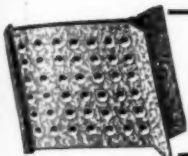


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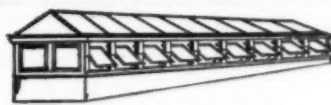


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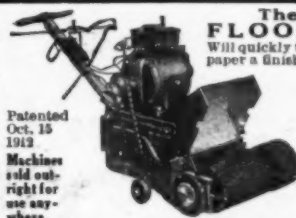
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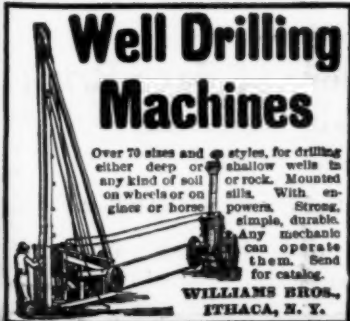
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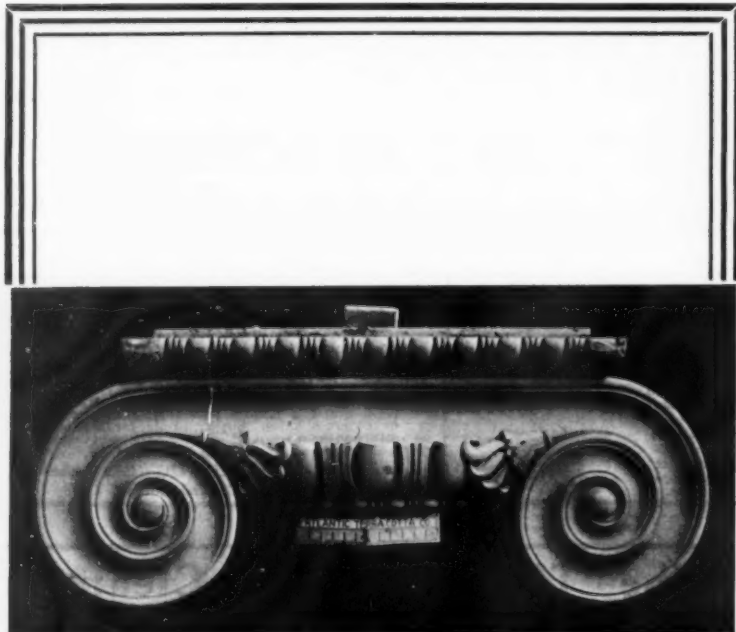
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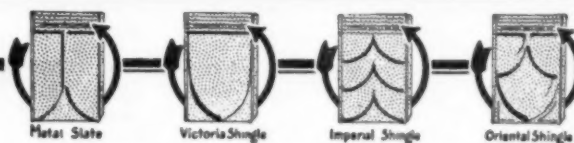
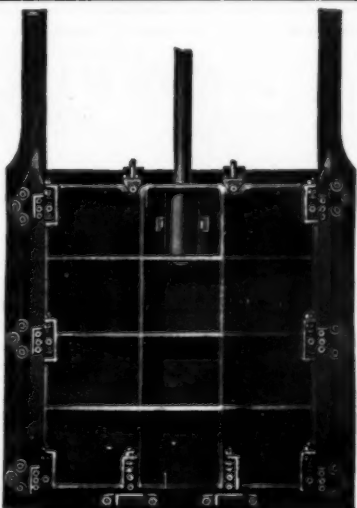
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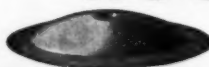
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"The Roll of Honor"

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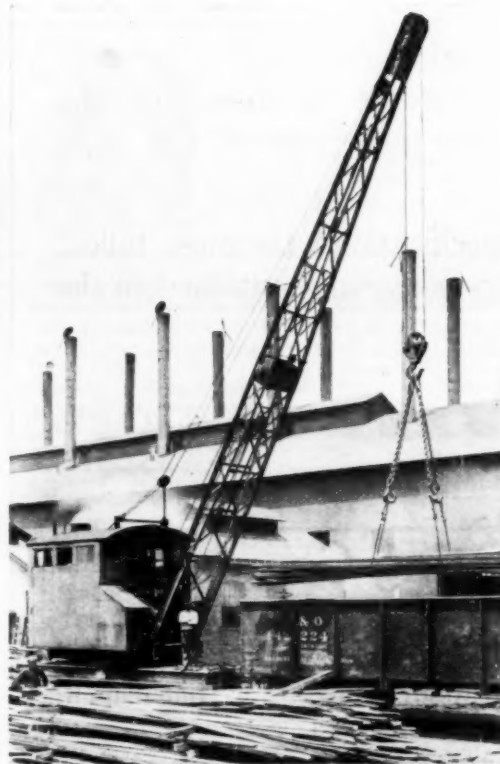


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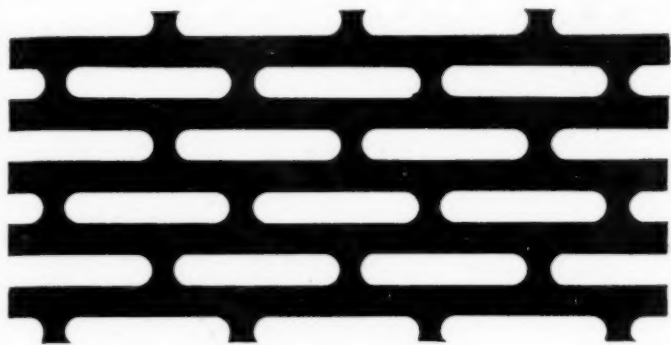
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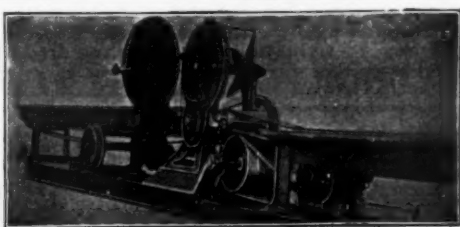
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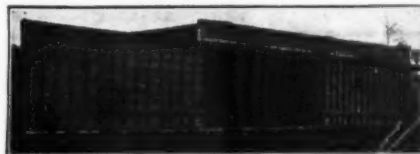
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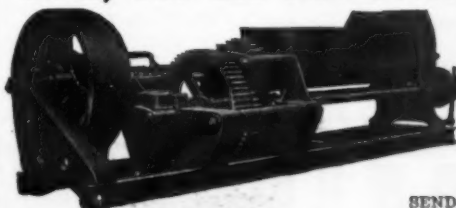
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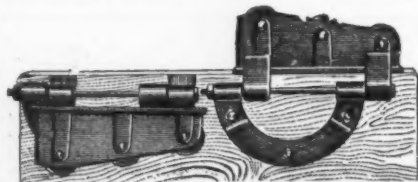
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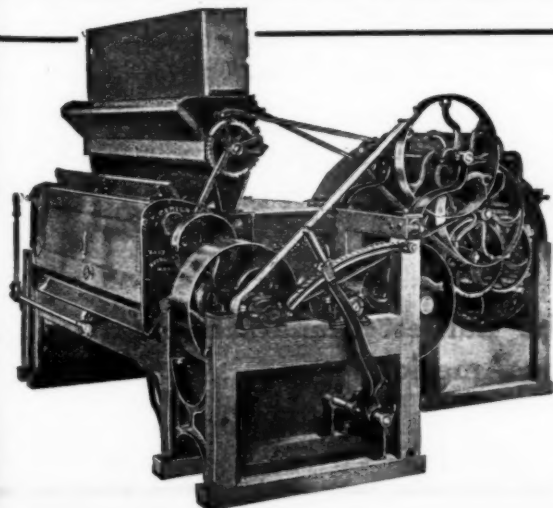
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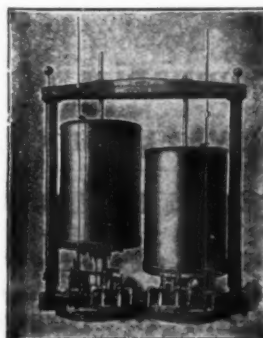
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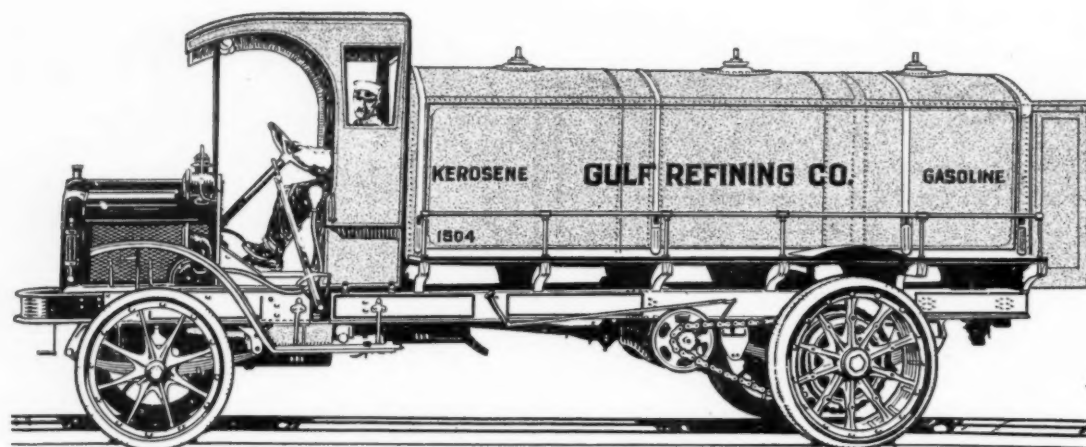
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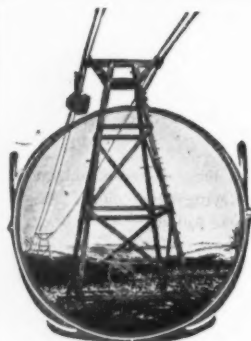
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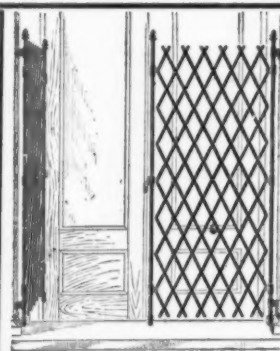
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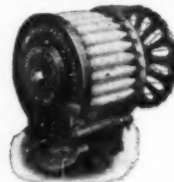
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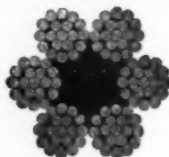
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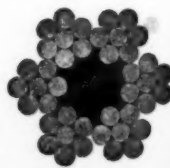
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A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office

VOL. LXVI. No. 11. }  
WEEKLY.

BALTIMORE, SEPTEMBER 17, 1914.

\$4.00 A YEAR.  
SINGLE COPIES, 15 CENTS.

PUBLISHED EVERY THURSDAY BY THE  
MANUFACTURERS RECORD PUBLISHING CO.

RICHARD H. EDMONDS, Pres. VICTOR H. POWER, Treas.  
FRANK GOULD, Vice-Pres. I. S. FIELD, Sec. y.

RICHARD H. EDMONDS, Editor and General Manager

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NEW ORLEANS, 814 Maison Blanche

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[Entered at the Baltimore Postoffice as second-class matter.]

In order to avoid delays, all correspondence pertaining to news or advertising matters should be addressed directly to the MANUFACTURERS RECORD, Baltimore, Md., and not to individual editors, officers, employees or any branch office.

## THE BASIS OF COTTON PROSPERITY ON WHICH TO MEET PRESENT ADVERSE SITUATION.

THE South is not poverty-stricken. If the present emergency had come in 1900, the outlook would, indeed, have been menacing, but not appalling. That year closed a lean period of nearly ten years in Southern agriculture, affecting all material activities. Temporary closing at that time of the market for 40 per cent. of the cotton crop would have been disastrous. But the South would have overcome the disaster.

This year marks the close of a decade of fat years in Southern agriculture. The South has had big crops of cotton and has received splendid prices for the crops. The prosperity of Southern farmers has been reflected in Southern prosperity generally. Between 1900 and 1914 opportunity has been given to Southern farmers to free themselves from long-standing debts, to increase the value of their holdings by making improvements and to provide against emergency. The difference between the last decade of the nineteenth century and the past decade is clearly indicated in a comparison of the cotton crops in the two periods as epitomized in the accompanying tables.

In the nine years between 1891 and 1899 the commercial cotton crop of the South increased from 8,652,597 bales, having an average price of 9.03 cents

Year ended August 31.	Cotton Bales.	Average price per lb., New York, middling uplands, Cents.	Crop value, including seed.
1891.....	8,652,597	9.03	\$486,000,000
1892.....	9,635,379	7.64	446,000,000
1893.....	6,700,365	8.24	321,000,000
1894.....	7,549,817	7.67	331,000,000
1895.....	9,901,251	6.50	326,000,000
1896.....	7,157,346	8.16	330,000,000
1897.....	8,757,964	7.72	371,000,000
1898.....	11,199,994	6.22	362,000,000
1899.....	11,274,840	6.00	320,000,000
Total.....	80,229,553		\$3,313,000,000

a pound for middling uplands at New York, to 11,274,840 bales, having an average price of 6 cents, the decrease in price being reflected in the decrease in the value of the crop, including seed, from \$486,000,000 in 1891 to \$320,000,000 in 1899.

In 1900, with a decrease in the crop of about 1,800,000 bales from that of 1899, the average price rose to 8.09 cents a pound, and between that year and 1905, with the average price rising in 1904 to 12.42 cents a pound, Southern cotton growers began to overcome the depression which had been theirs in the earlier period.

Between 1906 and 1914 the average yearly price quoted for middling uplands at New York in no year has been less than 10 cents a pound, the range being from 11.29 cents in 1906 to 13.31 cents in 1914, and touching 14.97 cents in 1910 and 14.55 cents in

1911. The record-making crop of 16,138,426 bales in 1912 averaged 10.83 cents a pound. The crop of 1906, although it was only 71,000 bales greater than the crop of 1899, brought 5.29 cents more a pound, and the crop of 1914, although it was 422,000 bales

Year ended August 31.	Cotton Bales.	Average price per lb., New York, middling uplands, Cents.	Crop value, including seed.
1906.....	11,345,988	11.29	\$716,000,000
1907.....	13,510,982	11.45	799,000,000
1908.....	11,571,966	11.29	959,000,000
1909.....	13,825,457	10.12	776,000,000
1910.....	16,909,698	14.97	902,000,000
1911.....	12,129,095	14.55	1,030,000,000
1912.....	16,138,426	10.83	938,000,000
1913.....	14,167,115	12.30	988,000,000
1914.....	14,588,591	13.31	1,114,000,000
Total.....	117,878,288		\$8,033,000,000

greater than that of 1913, brought something more than a cent a pound better price.

Moreover, although the nine crops of 1906-14 were less than 47 per cent. greater than the nine crops of 1891-99, their aggregate value was 142 per cent., or nearly one and a half times greater.

In the nine years between 1891 and 1899, inclusive, 80,229,553 bales were marketed and brought with the seed \$3,313,000,000, or an average of \$41.29 a bale.

Between 1900 and 1905, inclusive, 64,805,336 bales were marketed at \$3,467,000,000, or an average of \$53.49 a bale, showing the rapid recovery under way. Between 1906 and 1914 117,878,288 bales were marketed for \$8,033,000,000, or an average of \$68.14 a bale.

The volume of money brought into the South in the 24 years, nearly 55 per cent. of it belonging to the past nine years, may, perhaps, be better comprehended when it is known that the \$14,813,000,000 paid for the cotton and its seed amounted to \$7,463,000,000 more than all the gold mined in the world in the 24 years, and to \$4,817,000,000 more than all the gold and silver mined in that period.

Another point to be borne in mind is that cotton and its seed of the crop raised in 1899 represented 37 per cent. of the total value of all Southern farm crops of that year, while the crop with its seed raised in 1913 represented only about 30 per cent. of the value of all Southern farm crops in that year, the decreased percentage indicating the results of greater attention given to foodstuffs and feedstuffs.

## RAILROAD CONSTRUCTION EVIDENCE OF CONFIDENCE.

A SPIRIT of courageous confidence in the future distinguishes the annual report of the Norfolk & Western Railway, which has just been issued, in that it records the determination of the company to proceed with its plans for extension and improvement, notwithstanding that the rate decision was a disappointment. The work it has under way is described in the news columns of this issue, and included in the program are an extension into North Carolina, construction upon which is well advanced and is being continued; an extension into Kentucky, which has but just begun, and a third extension in Virginia that is being completed this month. Besides, the company is building second track, electrifying thirty miles of an important section of its main line in the coal regions, making liberal additions to its equipment, and in other ways is preparing to meet the requirements of its steadily growing business, the gross revenue from which now amounts to much more than \$44,000,000 per annum, or an increase of approximately three-quarters of a million of dollars as compared with last year.

But the Norfolk & Western is not the only railroad corporation that is making liberal expenditures upon its property. The Southern Railway has lately awarded several contracts for notable pieces of second-track construction that will be important advances

to it in the rapid transportation of both freight and passengers over its main lines. This is in fulfillment of the announcement that the company would spend \$20,000,000 between Washington and Atlanta, not to mention what it is doing elsewhere on its extensive system. The establishment of a large coal terminal on tidewater at Charleston is another piece of construction which the Southern has lately put under contract. In connection with this important improvement the company will rebuild its line from the Virginia coal fields to Charleston, so that the entire work required will run up well into millions of dollars. These contracts are but part of the energetic efforts of the management of the company, described in detail on another page of this issue, to increase facilities to meet the needs of the future, for new equipment is being purchased and many minor improvements are being made.

It is likewise noteworthy that the Seaboard Air Line is pushing construction upon its line into Charleston, which is an entirely new piece of road 57 miles long, and the rate at which progress thereon is being made gives reason to anticipate that it will be ready for use within a few months. It should also be remembered in this connection that the Carolina, Clinchfield & Ohio Railroad is building a coal terminal at Charleston which is expected to be used for the handling of fuel sent there for coastwise and foreign trade.

Although there are other railroad companies engaged in finishing up some important items of construction in the South, those which are here mentioned are conspicuous because of the fact that they were initiated after the development of conditions inclined to depress interest in new railroad work and to discourage investments therein.

## THE EMPHASIS IN COTTON FACTS IN 1913-14.

IF the 32,000,000 spindles in the cotton mills of the United States should be operated on full time this year, they would consume 7,630,000 bales of cotton, nearly 2,000,000 more bales than were consumed in the season just closed.

This fact, which has an important bearing upon the problem of the commercial cotton crop of the present season, is deducible from an analysis of conditions of the past season, in which several records were made for the South.

In the first place, the amount of cotton marketed between September 1, 1913, and August 31, 1914, was 14,588,591 bales, a commercial crop exceeded only in 1911-12. But the value of the crop, \$957,902,336, was \$40,546,747 greater than the previous record-making value of \$917,355,589 in 1910-11, and with the seed represented a primary production by cotton farms equal to \$1,114,502,336.

Mills of the United States took 5,550,930 bales, 92,994 bales more than in any previous season, and mills in thirteen of the cotton-growing States passed for the first time the 3,000,000-bale mark, taking 3,037,308 bales. They passed the 1,000,000-bale mark in 1896-7, the 1,500,000 mark in 1899-1900, the 2,000,000 mark in 1902-3, and the 2,500,000-bale mark in 1908-9.

In 1905-6 these mills took for the first time more cotton than the mills in the rest of the country. That record was repeated in 1907-8, and since 1909-10 it has been the regular habit. In the accompanying table is outlined statistically, by years, the advance made in the past two decades by mills in cotton-growing States compared with those in the rest of the country.

Between 1894 and 1914 the takings of cotton by mills in thirteen Southern States increased from 718,515 bales to 3,037,308 bales, or by 2,318,793 bales, equal to 322.7 per cent., while the increase for mills

in the rest of the country was only at the rate of 56.9 per cent., from 1,601,173 bales to 2,513,622 bales, or by 912,449 bales. The takings by these Southern mills in 1893-4 were only 30.9 per cent. of the tak-

**Takings of American Cotton by This Country's Mills.**

Year ending	Southern mills.	Northern mills.	Total.	Crop.
August 31.	Bales.	Bales.	Bales.	Bales.
1894.....	718,515	1,601,173	2,319,688	7,549,817
1895.....	862,838	2,083,839	2,946,677	9,901,251
1896.....	904,701	1,600,271	2,504,972	7,157,346
1897.....	1,042,671	1,804,680	2,847,351	8,757,964
1898.....	1,231,841	2,211,740	3,443,581	11,199,994
1899.....	1,399,399	2,190,095	3,589,494	11,274,840
1900.....	1,597,112	2,068,300	3,665,412	9,436,416
1901.....	1,620,931	1,967,570	3,588,501	10,353,422
1902.....	1,937,971	2,050,774	3,988,745	10,680,680
1903.....	2,000,729	1,967,635	3,968,364	10,727,559
1904.....	1,919,252	2,026,967	3,946,219	10,011,374
1905.....	2,163,565	2,282,145	4,445,650	13,565,885
1906.....	2,374,225	2,349,478	4,723,703	11,345,988
1907.....	2,439,108	2,526,390	4,965,498	13,510,982
1908.....	2,193,277	1,896,661	4,089,938	11,571,966
1909.....	2,559,873	2,680,118	5,239,991	13,825,457
1910.....	2,741,303	1,993,904	4,735,207	10,609,668
1911.....	2,363,616	1,993,576	4,357,192	12,120,095
1912.....	2,744,067	2,631,432	5,375,499	16,138,426
1913.....	2,969,559	2,488,377	5,457,936	14,167,115
1914.....	3,037,308	2,513,622	5,550,930	14,588,591

ings by all the mills of the country; in 1913-14 they constituted 54.7 per cent. of the total.

In the latter year, of the total equipment of 13,199,426 spindles, not including 69,468 using foreign cotton, in these thirteen Southern States 12,834,462 were active, 184,804 were idle and 180,160 were uncompleted. Of the active spindles about 900,000 were not in operation for a good part of the year, and in August there were 532,431 not running. And yet the 12,834,462 active spindles used 20.8 per cent. of the crop, against only 9.5 per cent. of the crop used in the same States in 1893-4.

As it is, therefore, with a spindleage equipment greater by 2,000,000 than that of the whole country in 1880, these Southern mills, if operated on full time, are fully capable of consuming 4,200,000 bales of the crop now moving toward market. They can handle 60 per cent. of the 2,000,000 bales additional to the takings of the past season within the capabilities of all American mills, and those 2,000,000 thus taken would reduce by nearly one-third the number of bales usually taken by the countries of Europe now at war. Should that be done, the situation for the cotton growers would begin to clear, even though England might for many months not be able to take any of its usual 3,500,000 annual supply of Southern cotton—a contingency by no means certain.

If, by working to full capacity all its spindles, this country should reduce the volume of its exports of cotton by nearly one-quarter, a long step would be taken toward the desired position where the bulk of American cotton would be sold in finished goods, instead of being shipped to other lands as raw material.

Approach to that goal has been slowly under way, as the South has tended to raise less of the total cotton crop of the world. In 1879-80 the United States exported 67.3 per cent. of its Southern cotton crop. The exports in 1893-4 represented 70.7 per cent. of the crop. Ten years later 61 per cent. was sent abroad, and in 1913-14 nearly 62 per cent. The disturbance caused by the European war emphasizes the weakness in the situation of nearly two-thirds of a production, worth \$1,000,000,000, being dependent upon the condition of foreign markets. It should emphasize, first, the wisdom of manufacturing enough cotton at home to bring the exports down to at least only one-third of the crop, and, second, of raising only so much cotton in the South as can be raised after raising home supplies of food and feed.

The possible effects of such a policy may be suggested in study of details of the cotton crop of 1913-14 taken from the valuable annual report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, and published on another page of this issue.

### FAITHFUL IN LITTLE.

IT is gratifying to note that, 'mid the tumults and the shoutings of the captains and the kings, some bureaus at Washington are going along in their unperturbed way. How refreshing to have in the

midst of a temperature of 80 or 90 degrees the suggestion that "sections where little ice forms during the winter may save the snow to use in place of ice the following summer"! But isn't there a bit of dangerous intrusion of the warlike spirit in the warning, "Look out for the army-worm moth with a colored wing during the coming month?"

### THE WORLD WILL NEED FOODSTUFFS—DUTY OF SOUTHERN FARMERS.

THE South must immediately to a very large extent readjust its farming operations. It has given too much attention to cotton. It has kept its "corn crib and its smokehouse in the West" already too long. It has annually paid out many millions of dollars for foodstuffs which it could to better advantage have raised at home. It has based too much of its business interests on the cotton crop, and it is now learning a lesson which for many years the MANUFACTURERS RECORD and all other papers in the South have been persistently preaching. Sometimes it takes a hard blow of poverty or a sudden emergency of unexpected responsibility to wake up the latent power in a man. Many a man has lived a humdrum life, achieving but little for himself or the world, half the time grumbling, dissatisfied, blaming the world for his lack of success, when, confronted by some great emergency, or when he saw his loved ones in danger of starvation because of his non-success, there has suddenly come to him a great awakening; indeed, it might be called, not in the religious aspect, but in the mental aspect, a new birth. Over night he becomes a new man, and he rises to the occasion. Ever afterwards he wonders why for so many years he so little realized his own weakness and his own shortcomings. Such men are found everywhere in life; you note them in every business office, in every shop and in all other walks of life.

The cotton-growing interests of the South are to a considerable extent in the situation of this unawakened man. In this section there are many cotton planters matching in ability and in energy the best business men of any section. These men can shape their own business to meet emergencies just as well as the merchant, the manufacturer or the banker, but there are tens of thousands of small farmers throughout the South who have concentrated all their thought and energy upon growing cotton. They know nothing else, and they have never been awakened by some great and overpowering situation to be driven to do new things. This situation is now upon them. Their cotton is temporarily not in demand even at a lower price than the cost of production. This situation will adjust itself in time, but they face the condition that the world will be short of foodstuffs for the next twelve months at least.

With nearly all of Europe involved in a war which is withdrawing from work nearly twice as many people as all engaged in agricultural pursuits in the United States, the farms of Europe will to a large extent go uncultivated, and yet the men engaged in this struggle must be fed. Millions of them withdrawn from the farms are suddenly made consumers instead of producers of farmstuffs. In this unprecedented condition it is essential that the United States should very largely increase its food supply. It must do this in order to help to keep Europe from starving and to provide the foodstuffs for our own people so that they may not have to bear the burden of almost prohibitive prices.

In the South this condition cuts two ways—it lessens the demand for the South's cotton and reduces the price, and it increases largely the price that the South must pay for the foodstuffs it buys elsewhere. It is doubly important, therefore, that the South should give its attention as never before to raising its own foodstuffs and to an extent as great as possible raising foodstuffs for shipment elsewhere. Every Southern farmer, if he will go at it properly, can raise more or less grain for his own needs, and a large proportion of them can raise enough in addition for sale elsewhere. They can all increase their production of potatoes and

market supplies; they can increase their poultry, their hogs and other livestock. They can learn to live at home, and in doing so develop an initiative and bring into active play all the reserve force that is in them.

It behooves the bankers and the merchants who are in touch with the farmers of the South to preach this doctrine so vigorously and persistently that every farmer will, during the coming twelve months at least, raise enough foodstuffs to supply his own needs, while millions of them could raise, in addition to that, enough to have a surplus for sale.

It should not be overlooked in studying the farm situation of the South that Maryland, the Virginias, Kentucky, Tennessee, Missouri, Oklahoma and Texas are already large producers of wheat, while the whole South has for some years been increasing its production of corn. It is, therefore, not a new thing that is being forced upon the South by the necessities of the times when the farmers of this section are urged to diversify their crops and raise food. They are already doing it to a large extent, but all of them must do it, and those who are now doing it should do it to a still larger extent. Costly as this experience is to the cotton-growing section of the South, that section will be repaid for all that it now loses if the present conditions drive the all-cotton-growing farmer into diversified agriculture.

### "SEE THE SOUTH FIRST AND ALL THE TIME."

ITALY has been receiving from its tourist business over \$700,000,000 a year, according to a statement published in the MANUFACTURERS RECORD a few weeks ago, carefully compiled by Dr. S. Z. Ammen, for many years a leading newspaper man of statistical training of Baltimore, who has been spending a year or more in Southern Europe. Dr. Ammen's statement showed how this vast tourist revenue had helped to enrich Italy and vivify its business activities. It is true that the tourists who have annually spent this stupendous sum in Italy of recent years have been drawn from all parts of the world. They have gone to Italy sometimes to spend a few days, or a few weeks, and, charmed by its climate and other attractions, have extended their stay from days to weeks, and weeks to months. The situation in Europe will completely change the tourist business, and open, at least so far as the people of this country are concerned, great possibilities to the South.

It was estimated when the European war commenced that 120,000 American tourists were on the Continent and in Great Britain. It is hardly conceivable, even if the war should end before winter, that the tourists which have heretofore flocked to Europe at all seasons of the year, some to seek the balmy air of the Mediterranean and others to visit the great centers of art and trade, will, for the next twelve months at least, return to Europe in any large numbers. This is the opportunity of the South.

"See the South first, last and all the time," should be the cry of railroads and hotels and all other interests concerned in the welfare of this section. If the thousands of people who annually visit Europe can now be turned to a study of the South, the tourist business of this section can be vastly increased. The campaign ought to begin immediately.

The high prices which the West is receiving for foodstuffs will make money easy and abundant in a large part of that section. Many thousands of people will be financially able to get away from the cold of the West and the North and go South this winter, in addition to the usual winter tourists. Here and there some who have been accustomed to go to the South may be unable, by reason of business conditions, to spend the winter there, but their place can be taken by others who are able to go and who can be drawn to the South if active and aggressive work is done.

As we have been depending to a large extent upon Europe for many of the things which we ought to have made at home, so, too, to a large extent have American people who have seen but little of their own country flocked to Europe. It is time now for a



## Southern Railway Improvements Under Way and Authorized

**P**resident Fairfax Harrison of the Southern Railway Co., in giving the MANUFACTURERS RECORD the following facts about the determination of the company to carry out planned improvements, says: "The history of the South in the last forty years has been one of self-help, and the men who have made the industrial South of today are still in the saddle. I believe that they are able to meet this crisis themselves. Though we are undoubtedly entitled to rely upon, and will have the co-operation, of all the agencies of government, Federal or State, to which freemen should look in emergency, we are being tempted by the suggestion that government, Federal or State, should do more for us than it has ever done for anyone before. We have become so used to the principle that government shall interfere in business for the regulation of it that some of us seem to have forgotten that justifiable regulation is a treatment of a disease and not a habit of nutrition. The Southern Railway Co. and the Companies associated with it are going ahead with undiminished vigor to accomplish the improvements for which capital has been provided and is in hand, and which have been found to be necessary to enable us to take care of the demands of the commerce of the South as we have experienced them, to say nothing of the future. I believe in the South today and in the future of the South. Its record of achievement in the past is an earnest of what it will accomplish in the future. Those who have the vision to see and to believe in this must have the courage now to act on their belief."

In pursuance of the plan to complete the double-tracking of the Southern Railway Co.'s main line from Washington, D. C., to Charlotte, N. C., as a part of the larger plan to provide a double-track railroad for the entire distance from Washington, D. C., to Atlanta, Ga., work is now under way on 74.6 miles of track which, it is estimated, will cost in the aggregate \$3,410,000.

This work, as of September 14, 1914, is being carried on under five separate projects.

The first of these covers work between Charlottesville and Arrowhead, Va., a distance of 7.4 miles, where the new double track is being built on the present grades and alignment, with the exception of the heavy grade at Arrowhead, which is being reduced to permit the handling of maximum tonnage on trains into and out of the siding at that point.

The second project covers the work from Elma to Tye River, Va., a distance of 10.09 miles, where the new double track is being built on present grades and alignment, except in the vicinity of Tye River, where the grade is being reduced to 0.9 per cent. northbound to conform to the general scheme of northbound-tonnage trains.

The third project covers the work between Tye River and Amherst, Va., a distance of 6.82 miles, which is one of the worst places on the main line of the Southern Railway both as to grades and curvature. The grades are being reduced from 1.5 per cent., uncompensated, to 0.9 per cent. northbound, and 1 per cent. southbound, compensated. The curvature is being reduced to 3 degrees maximum, and a very large proportion of the present curvature is being altogether eliminated.

The fourth project covers work between Dry Fork and Danville, Va., a distance of 12.93 miles. This is an entirely new line, to take the place of the present main line, which is located on grades approximately 100 feet to the mile and which have a maximum curvature of 14 degrees 40 minutes. The proposed line will have a maximum curvature of 3 degrees and maximum grades of 47 feet per mile. When this new line has been completed one engine will do the work that it is now taking two engines to do on the old line. This project also contemplates the building of a new concrete viaduct 900 feet long across the Dan River, with cantilevered sidewalks for the benefit of switchmen and operatives. This viaduct will be a handsome structure of great strength.

The fifth project covers work between Pelham and Denim, N. C., a distance of 36 miles, and consists of double-tracking on the present grades and alignment, except at points near Reidsville, near Reedy Fork Creek, and near Rudds, where grades will be reduced and a large amount of objectionable curvature eliminated. These revisions will make it practicable for an engine to handle as much tonnage between Greensboro and Danville as can now be hauled between Greensboro and Salisbury.

When this work has been completed the entire line from Washington, D. C., to Charlotte, N. C., will have been double-tracked, with the exception of five pieces of track with an aggregate length of approximately 67 miles, and the total double track between Washington and Atlanta will amount to 377.2 miles, leaving 271 miles to be double-tracked later.

In addition to the work between Washington and Charlotte, the company is constructing a double-track line 2.4 miles in length at Chattanooga, Tenn., to connect the Chattanooga Belt Line with the proposed Stevenson extension at the east end of Lookout Mountain tunnel at an estimated cost of \$159,000. Also, by conversion of side tracks into a second main track and connecting with the improvements at Forest Yard, just east of Memphis, at a cost of \$12,700, 3.85 miles of new double track is being provided from the east end of the yard to Kansas City Junction, which will facilitate the movement of trains into and out of Memphis.

On lines where the volume of traffic is not yet sufficiently dense to require double-tracking additional lap sidings are being installed to facilitate the movement of trains, and at many points the existing sidings are being lengthened in order to permit the passage of the long trains which can be hauled by the modern high-power engines which the company is using on many of its lines. The aggregate length of the new side-track construction under way is 86,322 feet, or more than 16½ miles. The aggregate cost of this work will be \$241,387. For the better carriage of the heavier classes of power now being operated the company is pursuing the policy of replacing some of its existing bridges, strengthening or filling in trestles and otherwise improving the roadbed and track. At the crossing of the Rappahannock River on the Washington division, 57 miles south of Washington, the northbound track has been carried by a metal bridge built in 1890, which is now being replaced with a modern steel structure, consisting of four through-riveted-truss spans 506 feet in length, at an estimated cost of \$50,000. At the crossing of the James River at Belle Isle, South Richmond, Va., a wooden bridge is being replaced with second-hand deck-girder spans supported on concrete piers, with a total length of 111 feet, at an estimated cost of \$6028.50. At the crossing of the Sipsey River on the Birmingham division, two miles east of Fayette, Ala., a standard wooden trestle is being replaced with a second-hand through-riveted span 114 feet long, resting on concrete piers, at an estimated cost of \$10,000. At various points on the company's lines trestles are being filled in or improved at an aggregate cost of \$19,062. Culverts are being installed on the system at a cost of \$17,602, and other miscellaneous track improvements, all tending to increase the efficiency of operation and to the preservation of the property, are being made at an aggregate cost of \$53,535.

An important factor of the strengthening of the company's tracks is the replacement on the lines of lighter traffic of light rail by heavier rail released from the main lines. By laying new standard 85-pound rail the purchase of 85-pound rail for the company for the first six months of the present fiscal year amounted to over 29,000 tons. This is being used on the lines of heavier traffic, releasing 65, 70, 75 and 80-pound rail. The best of the 70, 75 and 80-pound rail released is being relaid on the lines of lighter traffic, replacing 50, 56 and 60-pound rail. This laying of rail is being done at the rate of approximately 40 miles per month.

All double-track lines under operation and not heretofore so equipped are being provided with automatic

### A STAMP TAX TO MEET REVENUE DEFICIT.

**P**RESIDENT WILSON is not playing politics in connection with the proposed emergency tax of \$100,000,000. It is a pity that, in this emergency, his example is not followed. It is a shame that any member of Congress should dare use the occasion for politics. Putative fathers of the income-tax law naturally would take advantage of the emergency to amend the law, in vain hope of distracting attention from their incompetency as lawmakers revealed emphatically in the first returns of income tax under the law. Other Congressmen prefer opportunism to principle in selecting interests to be taxed. A large number are so self-conscious of their own incapacity for law-making, but are so skilled in picaresque politics, that they fear that any war tax imposed before the Congressional election will bring them to defeat. The MANUFACTURERS RECORD believes that real statesmen in Washington will serve their country best, regardless of the political debris that may thereby be removed from Congress, if they so legislate as to provide for a stamp tax to meet the Government's necessities.

### TO KEEP INFORMED.

**M**R. FRED L. SAWYER, vice-president and general manager of W. H. Sawyer & Sons Co. of Atlanta, in a letter to the MANUFACTURERS RECORD, says:

It is with a great deal of pleasure that we read carefully every issue of your valuable publication, but the current issue is so opportune and full of seasonable letters and suggestions that it is almost good enough to eat, and here's hoping that its contents, especially the articles pertaining to the present lamentable conditions of suspense, will be devoured whole by those that do not understand how and why such conditions should prevail.

By reading and thinking one can see the way into the trouble, also the way out, and those with power and influence should hasten to take advantage of the many suggestions offered and quoted, and do all in their power to inform and instruct those that depend on the "political rot" published in so many of our "misleading" newspapers.

Every publication of importance should take up your "cue" and follow your lead, and it would not be long before we would have "order out of chaos."

### To Drain 22,000 Acres.

About 22,000 acres of alluvial land in the South Grand River Valley near Jefferson City, Mo., will be drained by the Grand River Drainage District, which has been organized through the State Department of Land Reclamation, John H. Nolan commissioner. The cost is estimated at about \$250,000.

The Board of Trade of Decatur, Ga., has begun the publication of a monthly organ.

electric block signals. Generally the signals are of the alternating-current, three-position, upper-quadrant type, the blocks being approximately two miles long. The power transmission line carries 4400-volt three-phase 60-cycle current, and, in addition to operating the signals, is used for lighting the depots along the line. Two short stretches of 11 and 13.5 miles, respectively, are of the direct-current type. The estimated aggregate cost of this work is \$399,000.

With the view of providing ample facilities for handling its present volume of freight traffic and to provide for future growth, the company is constructing entirely new yards at Finley, Ala., just north of Birmingham, and at Forest Yard, just east of Memphis, Tenn., and is making very substantial improvements and additions to its facilities at Charleston, S. C.; Richmond, Va.; South Richmond, Va., and Mobile, Ala. The project at Finley consists of a receiving and gravity classification yard, local freight and storage yard, 25-stall roundhouse, wash and locker building, coaling station, cinder-handling plant, sand-handling plant, yard office and water-supply system. The yards will contain approximately 30 miles of track, with a capacity of nearly 2000 cars. The classification yard will be equipped with air-testing plant for testing brakes before trains leave the yard. The roundhouse will be built with reinforced concrete, provided with modern boiler-washing plant, and heated by hot-air-blast system. The turntable is a 90-foot deck type, operated by electric tractor. The coaling station will be built of reinforced concrete and will have an overhead storage capacity of 1000 tons. It is of the conveyor type, operated electrically, and arranged to coal locomotives on four tracks. The cinder-handling plant will consist of four longitudinal pits, each 160 feet long, arranged in pairs, with a loading track between each pair and facilities for loading cinders from the pits direct on cars. The sand-handling plant will consist of a sandhouse of reinforced concrete, with a wet-sand capacity of 100 cubic yards. The yard office will be a two-story frame building, 25x56 feet. A complete system of fire protection is being installed in connection with the water-supply system, and the entire plant will be electrically lighted. The estimated cost of all work to be done at Finley is \$611,000. The improvements at Forest Yard will consist of receiving and classification yards, roundhouse, coal-handling plant, cinder pits, sand-handling plant, water-supply system, store and oil house, planing mill, wash and locker room and yard office. The yards will have a capacity of approximately 1000 cars, the classification yard being equipped with air-brake testing facilities. The roundhouse will be a 12-stall reinforced concrete house, heated with a hot-air-blast system, and will be served by a 90-foot deck turntable. The coaling station will be a reinforced concrete structure, with storage capacity of 1000 tons overhead and 7500 tons on the ground. All coal will be handled automatically and will be delivered to locomotives on three tracks. The cinder-handling plant will consist of Robertson cinder conveyors operated by air. The sandhouse will have a wet storage capacity of 100 cubic yards. The water supply will be obtained from two deep wells and handled from the wells by means of pumps into a 200,000-gallon steel tank. The storehouse and oilhouse will consist of a brick building 35 feet wide by 90 feet long. The planing mill will be a brick building 30 feet wide by 50 feet long. The wash and locker room will be a frame building 25x30 feet, and the yard office will be a two-story frame building 25 feet wide by 56 feet long. The estimated cost of all work at the Forest Yard is \$625,000.

A most important improvement is the new coal dock at Charleston, S. C., which is to be constructed on lands adjoining the Cooper River. It consists of a dock 600x60 feet, on which are to be located a car dumper and loading tower of the Wellman-Seaver type. The present plans provide for loading one ship at a time, but the arrangement is such that the plant can be increased to load four ships simultaneously if business conditions shall justify such an extension. The capacity of the plant now to be built will be 1000 tons an hour, or 10,000 tons in one shift of 10 hours. The estimated cost of this work is \$400,000.

At Richmond, Va., the facilities being provided consist of an outbound freight depot 40 feet wide by 480 feet long, with a second-story office 40x168 feet; five house tracks, with a total capacity of 60 cars, and three team tracks, with a capacity of 25 cars, are being installed. The old James River & Kanawha Canal runs through this property directly in the path of these im-

provements, making it necessary to bridge over the entire width of the new facilities. The estimated cost of this work is \$195,000, and fire protection is to be provided at an additional cost of \$1200.

The improvements at South Richmond, Va., consist of rearranging and adding to the present yard facilities, constructing a new coaling station, cinder-handling plant, sand-handling plant, team-track facilities, improving and extending shop buildings, and constructing a combination freight and passenger station and yard office. The yard work includes building a new main line to Rockets Junction, connecting with the Seaboard Air Line for entrance into the Main Street Station at Richmond, and rearranging, lengthening and adding to the present yard, taking from the main line all classification yard and shop-yard switching. The capacity of the yard will be increased about 125 cars. The coal-handling plant will consist of a reinforced concrete structure, with 500 tons overhead storage and ground storage for 3100 tons. All coal will be automatically handled and delivered both to and from the overhead bins and ground storage, and will be delivered to engines on two tracks. The cinder-handling plant consists of four Robertson cinder conveyors. The sand-handling plant will consist of a reinforced concrete building, with a wet storage capacity of 60 cubic yards. To afford ample facilities for engines between the yard and the coal, cinder and sand facilities, a four-track system is being built, which necessitates the rebuilding of a highway bridge, carrying 7th street over the tracks. The team tracks will have a capacity of 20 cars. The additions and changes to the shop buildings will consist of a six-stall extension to the roundhouse, a brick extension to the pattern-storage house, new smoke jacks on the roundhouse, and a new tender-repair shop. An overhead foot bridge will be constructed over the yard tracks, which will make it unnecessary for shop employees to cross the tracks at grade, as is done at present. The combination freight and passenger depot will be of brick, with tile roof, 35 feet wide and 150 feet long. The yard office will be a frame building 25x56 feet. The entire cost of the improvements at South Richmond is estimated at \$350,000.

The improved facilities at Mobile, Ala., will consist of an outbound shed 34 feet wide by 410 feet long and inbound brick house 40 feet wide by 410 feet long, and a one-story brick office building at the ends of the two freight sheds 50x136 feet. The freight buildings will be served by four tracks placed between them, with an intermediate ribbon platform, giving a car capacity of 40 cars. In addition to these freight facilities, a cotton platform 40x330 feet will be constructed, with the necessary tracks and driveways. A storage yard with the capacity of 64 cars will be built, modern track scales will be installed, and small cinder-handling and coaling arrangements will be provided. The estimated cost of these improvements at Mobile is \$185,000.

An important improvement at Atlanta, Ga., consists of the construction of team and industrial tracks in the so-called Hightower property at an estimated cost of \$15,000, which will provide trackage for an extensive area of industrial and warehouse sites.

Additional and improved facilities for handling freight are being provided at other points on the system at an aggregate estimated cost of \$38,835.

New storage tracks, house tracks, team tracks and yard tracks are being installed at various points on the system at an aggregate estimated cost of \$54,310, and a large number of industrial and spur tracks are being built at an estimated cost of \$56,545.02.

All track scales now being installed by the Southern Railway Co. are of the most modern type, conforming to the recommendations of the Interstate Commerce Commission. In addition to the scales to be installed in connection with general improvements, such as that at Finley, other track scales are being put in at an estimated cost of \$21,400, and platform scales are being put at stations at a cost of \$1125.

Miscellaneous improvements to shops, including the purchase of roadway tools, the construction of tool-houses, improvements to shops, the purchase of shop tools and the provision of coal-handling facilities at various points on the lines involve expenditures aggregating \$69,582.16.

Additional provision for supplying water for locomotives, shops and for other purposes are being made at an estimated aggregate cost of \$29,075, and fire protection is being provided at various points at an estimated cost of \$11,662.

Interlocking plants are being installed at several points at an expense of \$11,906.16, and turntables and Y-tracks are being built at a cost of \$25,567.

Crossings at grade are being avoided in new construction wherever it is practicable to do so, and grade crossings are being eliminated at other points on the line at a total estimated cost of \$75,639.63.

At Columbia, S. C., and at Charleston, S. C., sheds are being constructed over the car-repair tracks at an estimated cost of \$36,000.

Additional and improved accommodations for the company's passenger traffic are being provided by the construction of new stations at some points and by additions and improvements to stations at many other points. The station at Manassas, Va., which was destroyed by fire some months ago, is being rebuilt and enlarged. Other new stations will be at The Plains, Va.; South Boston, Va.; North Wilkesboro, N. C.; Mt. Airy, N. C.; Reidsville, N. C.; Hillgirt, N. C.; Hawkinsville, Ga.; Duluth, Ga.; Ninety-Six, S. C.; Kershaw, S. C.; Clinton, Tenn., and Mt. Carmel, Ill. The total estimated cost of the new passenger stations and combination freight and passenger stations, and of additions and improvements to passenger stations and to combination freight and passenger stations, amounts to \$221,843.

Miscellaneous improvements, including the fencing of right of way, the provision of houses for section employees, the construction of telephone lines, the building and improvement of stock pens, etc., are being made at an aggregate estimated cost of \$56,520.

Aggregate estimated cost of all improvements enumerated, except laying of rail, \$7,471,723.47.

#### Improvements on Alabama Great Southern, Cincinnati, New Orleans & Texas Pacific and Virginia & Southwestern.

On the Alabama Great Southern Railroad new double track is being constructed from Birmingham, Ala., to Mobile Junction, Ala., a distance of 12.35 miles; from York, Ala., to Toomsaba, Ala., a distance of 15.45 miles, and from Russell, Miss., to Meridian, Miss., a distance of 6.6 miles, a total of 34.4 miles, at an aggregate estimated cost of \$1,254,000.

To provide a double-track entrance for the Alabama Great Southern Railroad to Chattanooga, the Wauhatchie Extension Railway, with a length of 2.67 miles, is being built from Wauhatchie to connect with the Stevenson Extension near the west portal of the Lookout Mountain tunnel. The maximum grade on this line will be 26 feet to the mile, and it will accommodate the heaviest trains on the Alabama Great Southern. Every grade crossing is being eliminated by permanent concrete structures. The estimated cost of this work is \$350,000.

On the Cincinnati, New Orleans & Texas Pacific Railway double track is being constructed from near Robbin, Tenn., to near Huffman, Tenn., a distance of 8.9 miles, at an estimated cost of \$470,000.

At East End avenue, Chattanooga, a concrete bridge carrying the avenue over the right-of-way of the Cincinnati Southern and the Western and Atlantic Railroad is being built at a cost of \$54,000.

On the Virginia & Southwestern Railway a standard trestle 157 feet long is being replaced by a deck-girder span 80 feet long on concrete abutments, the remaining length of the old trestle being filled in, at an estimated cost of \$9,500.

Other work on the Virginia & Southwestern includes building a trestle at Sunbright, Va., at an estimated cost of \$4265; the construction of new storage and engine tracks at St. Charles, Va., at an estimated cost of \$12,000; new wye connection tracks at Appalachia, Va., at an estimated cost of \$7000; constructing new loading tracks at Burem, Tenn., at an estimated cost of \$1390; constructing a small combination station at Persia, Tenn., at an estimated cost of \$700; installing track scales at St. Charles, Va., at an estimated cost of \$7500; building right-of-way fence at Oretton, Va., at an estimated cost of \$210, and constructing industrial tracks at an estimated cost of \$10,150.

Total cost of improvements on above lines, \$2,180,715.

Total cost of improvements on Southern Railway, A. G. S., C. N. O. & T. P., and V. & S. W., \$9,652,438.47.

The Board of Trade of Bartow, Fla., is circulating an artistic booklet telling of the advantages and opportunities of the city and its environs.



# Manganese Mining in Virginia

By M. A. ROWAN, E. M., Lowmoor, Va.

In view of the fact that the present European struggle has so markedly raised the price of ferro-manganese and so raised the price paid for the various grades of manganese ore by the Pennsylvania concern which is the chief purchaser of the ore for metallurgical purposes in the United States, and whose schedule is used as a basis of settlement by various other consumers, it is probable that more attention will be paid to deposits of manganese in Virginia than in other States which are supposed to contain deposits worthy of economic consideration. The question of transportation of the ore to the place of reduction to ferro places Virginia ores ahead of more Southern and Western deposits.

There are several deposits in Page and Rockingham counties, Virginia, that are of promise because surficial examinations show a relation and proximity to the quartzite, which outcrops at a sufficient number of places to justify the belief that basins exist similar to the one at Crimora, Augusta county, Virginia, which provided a condition favorable to the deposition of the largest body of ore so far exploited in the United States.

Prospecting by means of trenches and pits has proved the ore to be embedded in variegated and yellow clay, which colors have been the indicators of manganese sufficiently concentrated to be of commercial value. The mineral itself was high grade, low in silica and iron and also heavy, thus assuring its ready separation from its gangue in case development work would justify the erection of a concentrating mill. The consideration of the following facts will perhaps cause the would-be investor in manganese property to investigate further, and perhaps prevent the erection of "monuments to folly" similar to those erected in the past, for the purpose of concentrating the evanescent ore bodies that "promoters" have, with the aid of "self-styled experts," fostered upon various unsuspecting individuals to the depletion of their funds. Such events have undoubtedly prevented further prospecting and possible developments of ore bodies on the properties above mentioned, as well as other legitimate prospects.

First—Practically all of the manganese sufficiently concentrated to be considered of importance has been found in clay in the vicinity of or resting upon a stratum of Cambrian quartzite, which, considered geologically, has caused the deposition of the mineral from meteoric waters by stopping their circulation.

Second—The clay in which the ore has been found most highly concentrated has been the stiff, yellow variety, containing occasional fragments of sandstone and pieces of quartzite. The variegated or "calico" clay is usually found above the yellow. The black clay, colored by wad, has not been a fruitful source of the mineral, and when found indicates a leaching and dissemination of it.

Third—The specific gravity of the ore should be noted, as there are several known ore bodies where the mineral has been so leached as to reduce its density to a point so near that of its gangue as to prevent concentration by jigging, even though its manganese content was high.

Fourth—It is not probable that a body of clay bearing the mineral would be profitable if worked as an underground proposition if the ratio of the crude to concentrate ore is more than 4 to 1.

Fifth—The prospecting and attempted development of a body by means of a churn drill often gives deceptive results due to the ease with which the drill holes may be salted and a lump of ore may be inserted and driven through the soft, yielding clay, portions of it being knocked off and extracted as representative samples. The same is very true of lumps of the mineral encountered "in situ" in the downward course of the drill.

An important factor in the cost of mining the mineral is the strong and close timbering necessitated by the extremely "heavy" ground to be supported. This can be kept to a minimum by the driving of low, narrow drifts and headings for exploiting and cross-cut purposes, afterwards enlarging, if necessary, to required size.

Topographical and geological conditions which would permit the opening up of a deposit by a tunnel, which would serve for drainage also, would eliminate unwater-

ing the mine by means of expensive pumping, necessary in the case of a shaft opening, as the water in the clay is always excessive.

## PREPARE FOR FOODSTUFFS NOW.

### Urgent Plea from an Expert Interested in the Farmers.

J. H. Stewart, agricultural agent the Baltimore & Ohio Railroad Co., Morgantown, W. Va., writes to the MANUFACTURERS RECORD:

"Twenty years ago the farms of Kansas were practically all under mortgage, they were being operated at a loss and the State was spoken of derisively as the land of grasshoppers, drouths and typhoons. William Allen White, then editor of a paper in that State, about that time wrote an editorial headed 'What's the Matter With Kansas?' and the influence of that editorial probably more than anything else aroused the people of that State to its agricultural possibilities so much that in less than a quarter of a century the State has become enormously rich and is among the foremost leaders in the production of wealth and food products from their soils. This year Kansas produced one-sixth of all the wheat of the United States.

"Already the food products to our people have been advanced very considerably as a result of the anticipated increased demands in the great world's war zone. All the indications seem to be that this war will be much prolonged and even more disastrous than many now think. In any event, taking the most hopeful view of it, the harvesting and maturing of food crops in that region has already been enormously neglected and damaged and for the coming year we may rest assured that the production of foods will be greatly diminished, and, so far as we know, this may be true of the succeeding year. Therefore, it devolves upon that part of the world which is not directly involved in these wars to make strenuous efforts to supply this greatly-increased demand. But recently we have read over and over of the exportation of gold from this country in great quantities, which has called for extraordinary legislation and intervention by our Government to maintain the stability of finances in the United States. It seems to me that here is an opportunity to impress upon the landowners and farmers of the United States the duty which will fall upon them to supply foods for the markets of the world and to direct their attention to the great opportunity which they have, first, to supply these markets and to secure the great reward, and second, to demonstrate to ourselves our ability to produce more food than we have ever done.

"It goes without saying that an increase of 10 or 15 per cent. of every sort of food which we produce can be made without going beyond what is reasonable and practicable. The aggregate of this increase would amount to almost or quite \$1,000,000,000, and, should still higher prices prevail even more than that. If this is done it will greatly increase the balance of trade for the United States, bringing back to this country many millions of gold, the beneficial influence of which can hardly be foretold. In addition to this, if our people are incited to greater production it will have a strong tendency to hold down exaggerated prices to our own people for their food necessities, which will in no way work an injury to the farmer, since the speculative increases usually do not reach him.

"Taking the States traversed by the Baltimore & Ohio Railroad system, we find that they produce one-third of all the corn in the Union; one-third of the oats; one-seventh of the wheat; one-half of the buckwheat; one-quarter of the hay; about one-third of the meats and about 80 per cent. of the apples for the whole country. If this matter is pressed upon the attention of all the forces and organizations and upon the press, much can be done in the way of preparing to meet the great demand for foods throughout the world which I have mentioned. There is yet time to sow a large increase of wheat and winter oat acreage. Additional corn land can be sown in wheat in the corn belt to bring about a 15 per cent. increase without materially interfering with

other crops, and if fall plowing and winter plowing are set about actively and abundant good seed corn and seed potatoes are laid by for the coming spring, it will be easy for the States traversed by the Baltimore & Ohio system to increase the actual wealth of the country at least one-third of a billion dollars in the way suggested.

"We learn from the papers that it has already been proposed by the Canadian Government that 1,000,000 acres more of the food grains be sown this year, and from this press it appears that active steps are being taken in co-operation between the Government and its people to bring about this great result, but even if this is done, the increased production will be a bagatelle to the increased demand. And what is true of the soil crops is true of the fisheries of our country, which will find an unusual demand for all their products. There should be an enormous increase of canned products, sweet potatoes, beans, corn, tomatoes and fruits, for which there will be a great demand."

## FOR FIRE-RESISTANT WAREHOUSES.

### A Suggestion of Co-operation Among Interests Furnishing Materials.

Charles Catlett, chemist and geologist, Staunton, Va., writes to the MANUFACTURERS RECORD:

"In the present plan for warehousing cotton it is perfectly evident to me that the method will become a permanent institution in the South.

"The cheapest possible fireproof construction which can be put up could be built from cement blocks or cement run into forms.

"The difficulty is that in making concrete as lean in cement as possible, giving at the same time sufficient strength, we get a very porous material and one which is quite absorbent of moisture. Such a mixture also flows very poorly, having little plasticity and being what is called 'short.'

"If, however, there is mixed with such material a certain amount of hydrated lime, this shortness is overcome and the waterproofing qualities greatly improved.

"Next, if a small amount of any of the well-known waterproofing compounds is mixed with such a concrete, you can get a concrete very lean in cement which will still be repellant to moisture.

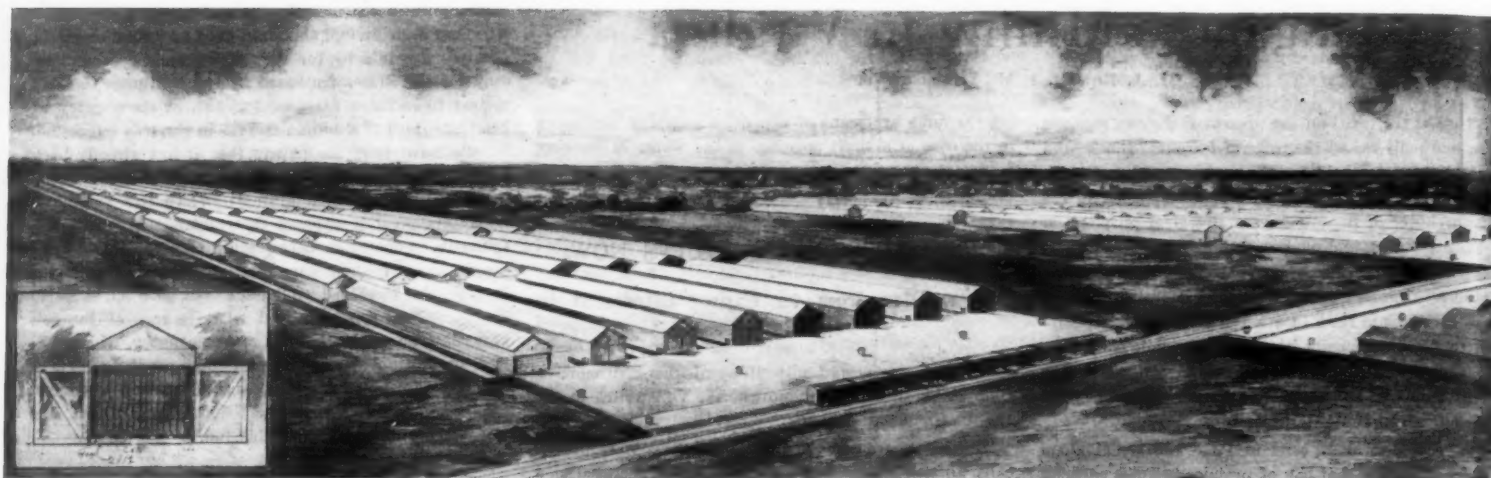
"Might it not be possible to secure the active co-operation of those cement companies, hydrated lime companies and waterproofing compound companies which operate extensively in the cotton States to make a special effort at this time to lay these facts before the cotton-growing communities? And to make a special effort and special concessions in order to insure the building of the most economic fire-resisting warehouses that are possible for the purpose and which can be built with great rapidity?"

## Big Salkahatchie Cypress Co.

The Big Salkahatchie Cypress Co. has been organized and is preparing to begin the construction of its plant at Varnville, S. C. Plans provide for an annual capacity of 17,000,000 feet of lumber, the saw and planing mills to be installed in a wood and concrete building costing from \$30,000 to \$40,000. Lumber, shingles and laths will be the product, and about 14,000 acres of timber land in Big Salkahatchie River valley will be developed. The officers are: President, H. B. Hewes, Jennerette, La.; first vice-president, R. H. Downman, New Orleans; second vice-president and general manager, E. C. Glenn, Varnville; secretary-treasurer, R. L. Montague, Charleston, S. C.

## American Glass Works to Resume.

This week the American Glass Works of Richmond, Va., will resume manufacturing after a cessation of nearly two months. During this time the plant has been thoroughly overhauled and improved so as to increase the capacity about 10 per cent., the product being bottles only. The output is shipped all over the country, and especially throughout the South, about 250 men being employed. This plant includes apparatus for manufacturing fuel gas used in melting glass and in the tempering process. The company has been in existence more than 20 years.



BIRD'S-EYE VIEW OF DESIGN BY W. G. TURNER, VICE-PRESIDENT OF THE MEMPHIS TERMINAL CORPORATION, FOR CLUSTER OF CHEAP AND SAFE COTTON WAREHOUSES.

## Cheap and Safe Storage of Cotton

W. G. Turner, vice-president in charge of operation of the Memphis Terminal Corporation of Memphis, Tenn., has designed a system of cluster warehouses for the cheap and safe storage of emergency cotton. Mr. Turner announces that his design is for the benefit of the entire cotton trade of the South, individuals or communities, and that they are free to utilize it if their necessities require extra storage for cotton. The accompanying illustration gives a bird's-eye view of one cluster of warehouses with capacity for the storage of 10,000 bales of cotton, erected in accordance with the requirements of fire underwriters and minimizing insurance rates as far as possible.

The details of capacity and cost for warehousing emergency cotton based upon the per-bale cost, assessed against the cost of construction and against the cost of all warehouse labor, are as follows:

One unit, packed capacity, piled 5 bales high, 270 bales.

One unit, working capacity, piled 5 bales high, 250 bales.

One cluster, 40 units, total packed capacity, piled 5 bales high, 10,800 bales.

One cluster, 40 units, total working capacity, piled 5 bales high, 10,000 bales.

Total land required to erect one cluster of warehouses of 40 units, based on insurance isolation requirements, approximately 14 acres.

Total approximate cost for complete erection of 1 cluster of warehouses, 40 units, \$6,895.57; cost \$6,895.57 for 10,000 bales, approximately 69 cents per bale. This estimate is based on lumber of \$18, or \$15, or \$10 per thousand feet, as detailed below. The cost of labor is based on one-half the cost of material.

Total approximate cost for all costs of warehousing, including overhead costs and labor costs for handling one cluster of 10,000 bales of cotton, 68 cents per bale.

Total cost for building and warehousing, \$1.37 per bale.

Announced insurance rate, \$1.50 per \$100 value on cotton in buildings constructed as per accompanying illustration.

To the cost per bale as here stated should be added the following unknown factors:

If land must be rented, and cost of rent calculated against 10,000 bales of cotton.

If land acquired must be cleared or/and graded add cost of clearing and/or grading calculated against 10,000 bales of cotton.

If railroad tracks must be constructed add cost of construction of number of feet or miles calculated against 10,000 bales of cotton.

If many units are constructed in one locality, forming a unit of clusters that would require the operation of a small railroad terminal, add cost calculated against this cost of operation of this terminal.

Estimated approximate cost of construction of one cluster, 40 units, includes:

Cost of frame material:

Lath strips, 173 bundles, at 25 cents per bundle, \$43.25.

Roof strips, 4320 lumber feet of 1x2, at \$18 per M, \$77.70.

Roof joists, 11,920 lumber feet of 2x4, at \$18 per M, \$214.56.

Ridge board, 4320 lumber feet of 2x4, at \$18 per M, \$51.84.

Post, 14,934 lumber feet 4x4, at \$18 per M, \$268.81.

Braces, 8640 lumber feet 1x6, at \$15 per M, \$129.60.

Belt strips (nailing), 28,800 lumber feet of 2x4, at \$18 per M, \$518.40.

Mud sills, 11,520 lumber feet of 2x8, at \$10 per M, \$115.20.

Frame, total, \$1419.36.

Cost of floors:

51,840 lumber feet of 6x6, at \$10 per M, \$518.40.

8640 lumber feet of 4x4, at \$10 per M, \$86.40.

34,560 lumber feet of 2x12, at \$10 per M, \$345.60.

Floor, total, \$950.40.

Cost of platforms:

Runs 4 feet wide, 48,185 lumber feet of 2x12 and 4x4, at \$10 per M, \$481.85.

Receiving and delivering platforms, 27,544 lumber feet of 2x12 and 4x4, at \$10 per M, \$275.44.

Platforms, total, \$757.29.

Cost of cover (roof felting):

Top, sides and ends, 1176 rolls, or 4703 squares, at \$1.25 per roll, \$1470.

Total cost of material, \$4597.05.

Cost of labor for placing material:

Cost of labor based on one-half the cost of material, \$2298.52.

Approximated total cost of construction, plus labor, \$6895.57, or approximately 69 cents per bale.

The overhead cost can just as easily handle three clusters, or 120 units, if location is concentrated, thus reducing this cost.

The watching item, to comply with insurance requirements, adds more than one-fourth of the total estimated expense per bale, as the time of service required is an unknown quantity, and is based on three men employed at \$2 per day for approximately one year, or 365 days.

Cost of watching per bale, 20 cents; cost of overhead and labor for unloading, arranging, sampling (both sides), trucking and storing, breaking out when sold, trucking and delivering, weighing and properly recording, 48 cents—a total of 68 cents.

### To Manufacture Tobacco Thermometers.

The Jordon Manufacturing Co., Lumberton, N. C., will be organized to manufacture an electric alarm thermometer invented by B. W. Jordan. This thermometer will be a heat and cold regulator for tobacco barns, to be used when the leaf is being cured. Its purpose is to obviate the necessity of overlooking the rise and fall of heat during the day and night. The company wants prices on materials for these thermometers and on machinery for manufacturing the various wood and metal parts.

### Limestone and Soil Potash.

State Chemist R. E. Stallings, of the Georgia Department of Agriculture, Atlanta, writing to the MANUFACTURERS RECORD regarding the use of lime for making soluble potash in the soil, says:

"Methods for the decomposition of potassium silicate carried out in the laboratory require a great length of time and under intense heat. A number of our Georgia soils are very deficient in potash, especially along the coastal region, and a good many of our other lands in different sections of the State. However, a number of our soils contain more potash than a normal soil should contain.

"I believe in the use of limestone, but when needed it should be used liberally—at least 2 tons per acre, and in some cases a great deal more.

"The main reason for the addition of limestone to soil is to correct the acidity of these soils, and a large percentage of our Georgia soils are acid. Limestone in fertilizer reverts the water soluble phosphoric acid to the reverted form, thus preventing the uniform distribution of the phosphoric acid in the soil where the roots could obtain it. If limestone is needed, it should not be added at the same time the fertilizer is applied on account of reverting the water soluble phosphoric acid.

"It is true that lime tends to liberate the potash and phosphoric acid in the soil, but you do not want to exhaust these elements if they are already deficient. If the supply of potash should be cut off for several years, it would be a serious matter for some of our soils unless some chemical means be found by which potash could be produced in this country.

"The proper time to use limestone is in preparing land for leguminous crops—to correct the soil acidity—which would build up the soil by the increased growth of these crops. Then by proper rotation of crops the beneficial effect of the use of lime or ground limestone would be felt by other crops."

### Georgia Warehouse Facilities.

Information from the most reliable sources, collected by the Georgia Chamber of Commerce, shows that the cotton warehouse facilities already existing in Georgia are sufficient to store almost 1,000,000 bales of cotton, or about 40 per cent. of the crop of the State. If the cotton crop of 1915 is greatly reduced, as it probably will be, and the production of foodstuffs and feedstuffs vastly increased, as they must be, much of the cotton warehouse space will be used for the storing of non-perishable food and feed crops and the handling of perishable crops. The Georgia Chamber of Commerce is bringing to the attention of the owners of cotton warehouses the fact that cold-storage facilities annexed to these warehouses will prove of great value in next and succeeding years, both in providing for the preservation of perishable crops and by enabling them to use cotton warehouse space for the handling, grading and packing of perishable crops.



## How Cotton Is Warehoused Safely And Economically at Manchester

Marshall Stevens, chairman of the directors of the Trafford Park Estates, Ltd., near Manchester, England, one of the great developing interests of that English port and center of the cotton trade, writes to the MANUFACTURERS RECORD as follows:

"My views on the cotton situation are not of any special value, but I can say it is quite certain that England will be able to continue her mills and fulfil her obligations to nine-tenths of the markets remaining open to her, notwithstanding the indefinite continuation of the European war.

"Together with the United States and the Far Eastern countries, England will also be able to provide textiles for the trade, which of necessity Germany and Austria must lose. The extent to which we shall be purchasers of American cotton will, as in normal times, depend upon the world's requirement, subject, of course, to the fact that in periods of stress like the present the demand shortens.

"I understand your Government intends to make advances on this season's crop, so that the situation with you need not be very serious.

"What I am most sorry about is that the arrangement which you and I were engaged in considering was never consummated, with the result that the difficulty of financing American cotton from the grower to the consumer here still continues, necessitating a very considerable wastage, most of which is lost to the grower.

We have here now a very fine and unique block of cotton safes, particulars of which I enclose.

"The other day when I was in New Orleans I found the commissioners were talking of putting up some 10-floor cotton storage. I advised them to hesitate before doing so and see what we were doing, with the result that their engineer came over here, and I think we shall find that our system has been adopted in New Orleans.

"This would be a step in the right direction, but the link in the chain which is most difficult to obtain is the certified grading of the cotton and the assurance that the documents cover the cotton described in them, with a knowledge that if it does not there are substantial financial undertakings on your side to make up for any delinquency.

"May I suggest to you that if your Government do make advances upon cotton, that they only do so upon cotton the grading of which is certified by them. Then there will be no trouble in sending that cotton forward here before it is sold, our financiers taking hold of it and so relieving the Government loan for repeated use.

"If the Government liked to allow cotton upon their advances to come forward to the market, we could supply our warrants and bankers' guarantees against it.

"I am as wishful as ever to assist in bringing about the through forwarding of cotton, and I can arrange for all the necessary facilities at this end."

The description of the "safes" sent by Mr. Stevens embraces valuable suggestions which may be applied practically in the South. It is as follows:

"The object of the Trafford Park Estates, Ltd., in erecting these fireproof safes is to provide efficient storage accommodations with the greatest economy in working at the smallest possible fire risk. The block of nine warehouses have an interior cubical capacity of 2,200,000 cubic feet. Nearly 40,000 bales of cotton can be accommodated in the nine safes. The cotton is received by rail and canal barge from alongside the ship, when the bales are hoisted by fast electric trolleys conveying the operator as well as the cotton; the cotton going to stock to its lot number in the safes. Cotton requiring inspection, mending, sampling or weighing can be brought out of the safe on to an operating platform, where it can receive attention and then be returned to stock or sent forward direct by rail, canal or road.

"The point of particular interest in connection with these safes is that the cost of fire insurance is very considerably reduced by both tariff and non-tariff offices, and this reduction is due to the construction and equipment of the warehouses, which are of reinforced concrete, and are divided into nine sections, each of one story. Each section is 165 feet long, 35 feet wide and 45 feet high. Hollow walls form a protective space between each section, and so add to the fireproof nature of the building. The roof, also of reinforced concrete, is carried upon reinforced stanchions forming part of the wall construction. Each of the nine sections is fitted with a three-motor crane, with a longitudinal and cross-traverse of 500 feet a minute or six miles an hour, and a lift of 80 feet a minute. Along the front of the building is a runway, which conveys cotton from or to the barges lying in the Bridgewater Canal from or to any of the safes at a speed of 800 feet a minute, or about nine miles an hour.

"The cranes in each section are so constructed that they can travel either in or out of that section and over two lines of rails, which run along the front of the building, thus being able to load cotton to or from railway wagons, and also from lorries or motor vehicles. The cranes are so arranged that the electrical block carrying the operator and the load can be transferred from one section to another quite on their own power; this is done by a new device whereby the crane bridge of one section can be brought into line with the crane bridge of the next section, thereby making a continuous runway. These advantages are not enjoyed by the ordinary warehouse. All the electric wirings are on the outside of the building, and the whole of the safes are covered by an approved installation of automatic sprinklers connected with an elevated tank and with a powerful electrically-driven high-pressure pump. This pump also feeds a large main running along the high level operating platform, in which there is a valve and instantaneous coupling for a monitor jet opposite the door of each of the nine safes. A monitor jet can be fixed to this coupling, and a jet thrown to the back end of the safes a distance of 148 feet. This monitor jet can be augmented by two other jets through hand nozzles. These jets will also serve the whole of the weighing and sampling platforms. It will thus be seen that a copious supply of water is obtainable at all times, and can be directed to every part of the buildings, and these facilities, in case of the outbreak of fire, have greatly influenced the insurance companies in the question of low premiums. Fire insurance can be covered at Lloyds at 2/ per £100 per annum. All these improvements from the merchants' point of view will be a cheapening in the cost of storing cotton. The railways alongside the safes are connected with the docks and all the main line railways."

Warehousing charges range, according to the kind of cotton, American, Egyptian or East Indian, from 6½ pence to 5 pence per bale for haulage from Manchester docks to warehouse, receiving and piling in safe and delivery to rail or cart, or from 5½ pence to 4 pence per bale for receiving and piling in safe and delivery to rail or cart; 1½ pence per bale for sampling; from 2 pence to 3 pence per bale for weighing or receiving or delivery; 1 shilling 6 pence per bale for taring on receiving or delivery; 1½ pence to 1 penny per bale for remarking, and from ¼ of a penny to 1 penny per bale for rent. Additional charges are made for duplicate samples, a minimum charge of 3 pence for weights, and extra charge of 6 pence per ton for delivery to barge and for mending, the cost of material, actual men's time and cost of supervision plus 12½ per cent.

Consolidated rates, including haulage to and receiving into warehouse,



View of Storage Safe Containing American Cotton in Plant of Trafford Park Estates, Ltd., near Manchester, England.



View of Storage Safe Containing Egyptian Cotton in Plant of Trafford Park Estates, Ltd., near Manchester, England.

piling, sampling and reweighing on receiving or delivery, delivery from warehouse to carts or railway wagons, and including four weeks' rent, are 4 shillings and 10 pence per ton for American cotton and 3 shillings per ton for Egyptian cotton, with an extra charge of 6 pence per ton for delivery to barge.

### FOR LATIN-AMERICAN TRADE.

#### To Get in Touch with Countries to the South of Us Through Consular Officers.

Interest in opportunities for extending trade with Mexico, Central America and South America which has been given a great impetus through the European war suggests the publication here of a list of United States consular offices and their addresses in those lands and a list of the consular representatives of those lands in Southern cities. Business men and manufacturers seeking wider connections in the Latin-American countries may find it of practical advantage to write to the offices mentioned for detailed information as to trade opportunities in the several countries. As officials are often changed, we have omitted their names, since letters addressed, for instance, to United States Consul, Rio de Janeiro, Brazil, will be delivered as readily as though the consul's name was given. The lists follow.

#### SOUTH AMERICAN CONSULAR OFFICES IN THE UNITED STATES.

Argentina.		
Alabama.....	Mobile.....	Vice-Consul
Florida.....	Apalachicola.....	"
".....	Fernandina.....	"
".....	Pensacola.....	"
Georgia.....	Brunswick.....	"
".....	Savannah.....	"
Louisiana.....	New Orleans.....	"
Maryland.....	Baltimore.....	"
Mississippi.....	Pascagoula.....	"
Missouri.....	St. Louis.....	"
Texas.....	Port Arthur.....	"
Virginia.....	Newport News.....	"
".....	Norfolk.....	"

Bolivia.		
Louisiana.....	New Orleans.....	Honorary Consul
Maryland.....	Baltimore.....	Consul
Missouri.....	Kansas City.....	Honorary Consul
Virginia.....	Norfolk.....	Vice-Consul

Brazil.		
Alabama.....	Mobile.....	Vice-Consul
Florida.....	Fernandina.....	"
".....	Pensacola.....	"
Georgia.....	Brunswick.....	"
".....	Savannah.....	"
Louisiana.....	New Orleans.....	"
Maryland.....	Baltimore.....	"
Mississippi.....	Gulfport.....	"
".....	Pascagoula.....	"
Missouri.....	St. Louis.....	"
Texas.....	Port Arthur.....	"
Virginia.....	Norfolk and Newport News.....	"

Chile.		
Georgia.....	Savannah.....	Consul
Louisiana.....	New Orleans.....	"
Maryland.....	Baltimore.....	"
Missouri.....	St. Louis.....	"
Virginia.....	Norfolk.....	Vice-Consul

Colombia.		
Alabama.....	Mobile.....	Consul
Louisiana.....	New Orleans.....	Consular Agent
Maryland.....	Baltimore.....	Consul
Mississippi.....	Gulfport.....	Consular Agent
Missouri.....	St. Louis.....	Consul
Virginia.....	Norfolk.....	Vice-Consul

Ecuador.		
Louisiana.....	New Orleans.....	Consul
Maryland.....	Baltimore.....	"
Missouri.....	St. Louis.....	"
Texas.....	Galveston.....	"
Virginia.....	Norfolk.....	Vice-Consul

Paraguay.		
Alabama.....	Mobile.....	Vice-Consul
Maryland.....	Baltimore.....	"
Missouri.....	Kansas City.....	"
".....	St. Louis.....	"
Virginia.....	Richmond.....	"
Delaware.....	Wilmington.....	"
District of Columbia.....	Washington.....	Consul-General

Peru.		
Louisiana.....	New Orleans.....	Consul
Maryland.....	Baltimore.....	"
Virginia.....	Norfolk.....	Vice-Consul

Uruguay.		
Alabama.....	Mobile.....	Vice-Consul
Florida.....	Apalachicola.....	"
".....	Jacksonville.....	"
".....	Pensacola.....	"
Georgia.....	Brunswick.....	"
".....	Savannah.....	Consul
Louisiana.....	New Orleans.....	Vice-Consul
Maryland.....	Baltimore.....	Consul
Mississippi.....	Pascagoula.....	Vice-Consul
South Carolina.....	Charleston.....	"
Texas.....	Galveston.....	"
".....	Port Arthur & Sabine Pass.....	"
Virginia.....	Newport News.....	"
".....	Norfolk.....	"

Venezuela.		
Louisiana.....	New Orleans.....	Honorary Consul
Missouri.....	St. Louis.....	"

#### MEXICAN CONSULAR OFFICES IN THE UNITED STATES.

Alabama.....	Mobile.....	Consul
Florida.....	Pensacola.....	"
".....	Tampa.....	Honorary Vice-Consul
Kentucky.....	Louisville.....	Consul
Louisiana.....	New Orleans.....	"
Maryland.....	Baltimore.....	"
Mississippi.....	Pascagoula.....	Vice-Consul
Missouri.....	Kansas City.....	Consul
".....	St. Louis.....	"
Texas.....	Brownsville.....	"
".....	Del Rio.....	"
".....	Eagle Pass.....	"
".....	El Paso.....	"
".....	Galveston.....	"
".....	Laredo.....	"
".....	Marfa.....	"
".....	Port Arthur.....	"
".....	Rio Grande.....	"
".....	Rome.....	"
".....	San Antonio.....	Consul-General
".....	Texas City.....	"
Virginia.....	Newport News.....	Honorary Consul
".....	Norfolk.....	Consul

#### CENTRAL AMERICAN CONSULAR OFFICES IN THE UNITED STATES.

Costa Rica.		
Alabama.....	Mobile.....	Consul
Louisiana.....	New Orleans.....	Consul-General
Maryland.....	Baltimore.....	Vice-Consul
Missouri.....	St. Louis.....	Consul
Texas.....	Galveston.....	"
Virginia.....	Norfolk.....	Honorary Consul
".....	Richmond.....	"

Guatemala.		
Alabama.....	Mobile.....	Consul
Florida.....	Pensacola.....	Honorary Vice-Consul
Kentucky.....	Louisville.....	Honorary Consul
Louisiana.....	New Orleans.....	Consul-General
Maryland.....	Baltimore.....	Honorary Consul-General
Mississippi.....	Gulfport.....	Vice-Consul
Missouri.....	St. Louis.....	Honorary Consul-General
Texas.....	Galveston.....	Consul

Honduras.		
Alabama.....	Mobile.....	Consul
Florida.....	Jacksonville.....	Vice-Consul
".....	Tampa.....	"
Kentucky.....	Louisville.....	Honorary Consul
Louisiana.....	New Orleans.....	Consul-General
Maryland.....	Baltimore.....	"
Missouri.....	Kansas City.....	Honorary Consul
".....	St. Louis.....	Consul-General
Texas.....	Galveston.....	Honorary Consul
Virginia.....	Newport News.....	"
District of Columbia.....	Washington.....	"

Nicaragua.		
Alabama.....	Mobile.....	Consul
Louisiana.....	New Orleans.....	Consul-General
Missouri.....	Kansas City.....	"
".....	St. Louis.....	"
Virginia.....	Norfolk.....	"

Panama.		
Alabama.....	Mobile.....	Consul
Georgia.....	Atlanta.....	"
Louisiana.....	New Orleans.....	Consul-General
Maryland.....	Baltimore.....	Vice-Consul
Mississippi.....	Gulfport.....	Honorary Consul
Missouri.....	Kansas City.....	Consul
".....	St. Louis.....	Honorary Consul
Tennessee.....	Chattanooga.....	Consul
Texas.....	Galveston.....	"
Virginia.....	Norfolk.....	Honorary Consul

Salvador.		
Louisiana.....	New Orleans.....	Consul
Missouri.....	St. Louis.....	Honorary Consul

#### UNITED STATES CONSULAR OFFICES IN SOUTH AMERICA.

Argentina.		
Buenos Aires.....		Consul-General
Rosario.....		Consul

Brazil.		
Bahia.....		Consul
Para.....		"
Pernambuco.....		"
Rio de Janeiro.....		Consul-General
Santos.....		Consul

Chile.		
Iquique.....		Consul
Punta Arenas.....		"
Valparaiso.....		"

Colombia.		
Barranquilla.....		Consul
Bogota.....		Consul-General
Cartagena.....		Consul

Ecuador.		
Guayaquil.....		Consul-General

Paraguay.		
Asuncion.....		Consul

Peru.		
Callao.....		Consul-General
Iquitos.....		Consul

Uruguay.		
Montevideo.....		Consul

Venezuela.		
La Guaira.....		Consul
Maracaibo.....		"
Puerto Cabello.....		"

#### UNITED STATES CONSULAR OFFICES IN CENTRAL AMERICA.

Costa Rica.		
Port Limon.....		Consul
San Jose.....		"

Guatemala.		
Guatemala.....		Consul-General

Honduras.		
Celba.....		Consul
Puerto Cortes.....		"
Tegucigalpa.....		"

Nicaragua.		
Bluefields.....		Consul
Corinto.....		"
Managua.....		"

Panama.		
Colon.....		Consul
Panama.....		Consul-General

Salvador.		
San Salvador.....		Consul-General

#### UNITED STATES CONSULAR OFFICES IN MEXICO.

Agua Calientes.....	Agua Calientes.....	Consul
Chihuahua.....	Chihuahua.....	"
".....	Ciudad Juarez.....	"
Coahuila.....	Ciudad Porfirio Diaz.....	"
Chiapas.....	Tapachula.....	"
Coahuila.....	Saltillo.....	"
Colima.....	Manzanillo.....	"
Durango.....	Durango.....	"
Guerrero.....	Acapulco.....	"
Jalisco.....	Guadalajara.....	"
Lower California.....	Ensenada.....	"
".....	La Paz.....	"
Nuevo Leon.....	Monterrey.....	Consul-General
Oaxaca.....	Salina Cruz.....	Consul
Sinaloa.....	Mazatlan.....	"
San Luis Potosi.....	San Luis Potosi.....	"
Sonora.....	Nogales.....	"
".....	Hermosillo.....	"
Tamaulipas.....	Tampico.....	"
".....	Nuevo Laredo.....	"
".....	Matamoros.....	"
Tabasco.....	Frontera.....	"
Federal District.....	Mexico City.....	Consul-General
Yucatan.....	Progreso.....	Consul
Vera Cruz.....	Vera Cruz.....	"

#### For Export to Norway.

H. S. Johannsen, 50 Church street, New York, writes to the MANUFACTURERS RECORD as follows:

"Kindly advise some of your advertisers that we wish communications from reliable manufacturers who can quote prices, including protective commission, for specified territory on goods delivered f. a. s. steamer New York for export to Norway. Cash in New York against ocean shipping documents. These goods cover mill supplies and tools, including lubricating oils and greases, packing, picked waste, etc., also electrical mill machinery."

Representatives of the oil interests of West Virginia will meet at Parkersburg on September 28 for the purpose of organizing the Oil and Gas Producers' Association of West Virginia.



# For Development of American Harbors

COMPREHENSIVE WORK OUTLINED BY THE ASSOCIATION OF PORT AUTHORITIES

"Port development is of primary importance to cities because it means cheap living for the people and because it provides manufacturing opportunities by cheapening raw materials and affording facilities for exporting finished products. Manufacturing means more to a city than commerce passing through, because manufacturing brings a fixed population and causes an accumulation of wealth.

"Port development is of national importance. The exchange of commodities between ships and railroads should be made as cheap as possible in order to market the surplus products of the country to advantage. Thus port affairs are as much a matter of national as of local concern. Every interior city and town in the United States is dependent upon the seaport for the marketing of its products out of the country. It is just as important to Chicago, for example, that there should be good ports along the Atlantic and Pacific and the Gulf Coast as it is to the coast towns themselves.

"From the standpoint of international policy, seaports afford the points of contact between the nations of the world, and freedom from trade restriction is as important to them as straight, deep and wide channels of approach and publicly controlled terminal facilities along the foreshores.

"Transportation by railroads and steamships and rapid communication by telegraph and cable have in very recent years effected a radical transformation in the relations of the people of the world, which is now much smaller than it was years ago as a consequence of transportation improvements. Coal can be sent cheaply everywhere by water, and the less bulky raw materials and manufactures are about as available at any seaport as in the countries of their origin, since water transportation has become so available, quick, cheap and regular.

"As a consequence there is a marked tendency toward the transference of manufacturing industries from interior towns to seaports. The opportunity for cheap manufacturing, coupled with low railroad rates covering seaports, which are based upon the potentiality of water competition, under the decisions of the Interstate Commerce Commission, open an exceptional opportunity for those ports as manufacturing centers. The more enterprising ports of the country, like New Orleans, Los Angeles, San Francisco and Boston, are aware of these possibilities, and by providing the best terminals for cheap handling of commodities, including railroad service connecting all parts of the port with all carriers, under public supervision, have laid the basis for civic growth through industrial expansion.

"At most seaports the important reorganization problem is to provide a railroad movement of commodities in the rear of the docks, which should be as public and economical as the movement of water-borne traffic in front of the docks. The old system of separate railroad waterfront terminals, with factory sidings only along the main stem, must give way to a policy of port development which will connect all the factories with all the railroads and with all the steamships; in other words, the whole port should be organized as a general terminal in which all parts are available to all carriers and all shippers.

"The only reason railroad antagonisms have grown up in certain cities is because such cities have neglected to plan their terminals in a comprehensive way and have left it to the railroads to do the best they could in an individual way.

"Unfortunately, port development does not enlist the popular support of any great number of people. They do not understand it. The city is so close to them, the city's necessities so imminent, that their attention is absorbed in those matters, and port utilities are neglected. The larger the city the more likely that is to be the case. Because of this situation the Association of Port Authorities was organized. By meeting at different seaports and comparing the enterprises and practices and mistakes of each port, the organization is building up a body of opinion tending to direct port organization in the right channels. Up-to-date information regarding port affairs can best be secured—in fact, I believe, can only be secured at this time—through the publication of the proceedings of this or-

ganization. There is no body of technical literature available for port development that I know of except the proceedings of this convention, and that is of exceedingly great value. That will be supplemented by the co-operation of the Department of Commerce and the War Department, and with the Federal officials and the port officials, and I believe the influence of this organization can be enormously extended. Through discussions and the dissemination of information a general policy will gradually be adopted and certain general principles of port organization become clearly recognized as standard. Expensive mistakes in port organization and development should thus be obviated and the best methods, adapted to the peculiarities of each individual port, should be adopted as the result of a broad, comprehensive knowledge of important basic principles.

"The seaports of the country and of the world are in sharp rivalry with each other. It is desirable that this rivalry shall be friendly and shall be utilized to stimulate the best modern development at all ports. This is undoubtedly the tendency, under present conditions of publicity as provided by this association."

Thus was summarized the purport of the Association of Port Authorities, the occasion for its creation and the scope of its activities, by Mr. Calvin Tomkins, its first president, in a talk with a MANUFACTURERS RECORD representative. The association held its third annual meeting in Baltimore last week. The first meeting was held in New York in 1912, and the next in New Orleans last year. Mr. Tomkins, an authority on the various phases of port development, and Commissioner of Docks of New York City during Mayor Gaynor's administration, was chosen first president and re-elected in New Orleans. At the Baltimore meeting Mr. Oscar F. Lackey, president and engineer of the Harbor Board of Baltimore, was elected as Mr. Tomkins' successor.

At the Baltimore meeting the papers and the discussions demonstrated that a very widespread interest has been aroused by the association in the work of standardizing port developments. So important is the work regarded that a change in the scope of the association's influence and activities was effected, by which memberships from any port in North or South America are to be accepted. Representatives from Canadian ports who were in attendance announced at once their desire for representation, and it is the expectation that in due time memberships will be applied for by representatives of South and Central American ports.

Membership in the association is made up of officials connected with port management and ex-port officials, representatives of departments of the Federal Government, and those interested in the purposes and work of the association are eligible to become associate members.

The association grew out of a suggestion of Director Norris of Philadelphia to Commissioner Tomkins of New York, that New York, Boston and Philadelphia get together and consider matters of mutual interest. After the meeting it was believed that an extension of that idea would be a good thing, so Messrs. Norris and Tomkins decided to invite all the other ports, and the result was the first meeting in New York two years ago; and the thought has grown into the present body, which is increasing in influence and membership out of all proportion to the attention it is attracting in the country. As announced in the constitution, "The purpose of the association is to exchange information relative to port construction, maintenance, operation, organization, administration and management, and to formulate recommendations, so far as possible, for uniform policies and the standardization of port facilities, and to promote city, state and national publicity of all port affairs; also, for the encouragement of water-borne transportation and to provide a permanent organization of port authorities."

The dozen papers read and the discussion that followed covered a wide range of topics, from local conditions to international relations. Naturally, much of the interest was centered in methods of development and management of the ports of this country.

In the main, it appeared that public ownership and

control of all port facilities is regarded as essential to a completely rounded out development of port facilities, while there is a difference of opinion as to the feasibility of public operation of such facilities. That the railroads themselves might look with favor on a tendency toward ownership of terminals by municipalities or states was indicated in a statement made by one of the speakers at the meeting, who referred to the burden put upon the trunk line railroads by terminals, which he figured at 30 per cent. at least of the entire capitalization, in cities having water transportation. He thought that possibly 50 per cent. or more of all their capital is invested in what may properly be called terminals of all kinds in all cities.

In his thoughtful opening address on "Seaport Relations to Trade and Transportation," President Calvin Tomkins dwelt on the causes of the present European war, and reached the conclusion that "when exhaustion among the combatants shall re-establish reason in place of force, this country will surely be called upon to help bring order out of the chaos of war and hate, to help curtail the secret power of dynasties and by its example to encourage the democratization of Europe, whose people do not want war and whose dynasties and diplomats delivered them to it." Untrammeled trade relations between all the peoples of the earth was declared necessary under modern conditions. "The interdependence of all nations is the one great hopeful fact which is being demonstrated by the world-wide disaster of this war. Confidence, credit, transportation and exchange have temporarily broken down, but the very magnitude of the disaster shows the extent to which human relations have in very recent years changed for the better, and the war perhaps marks the final breakdown of the old separatist system of restrictions."

Commerce is between individuals, not between nations, and there should be a way to curb the power of transmuting private trade rivalries into international misunderstandings. Citizens of the world should acquiesce in some reasonable limitation of national sovereignty, some concert of action which shall secure to them peace and justice outside as well as inside of national boundary lines.

In his paper on "The relation of Federal Government to the City in Port Development," Col. William M. Black, United States Engineer, New York, recited laws and decisions relative to the right of supervision and control vested in the United States Government over navigable waterways and waterfronts, for the protection of the people's rights of navigation. Under the laws, the nation improves and maintains the waterways, which have to be free and open for the use of all. The functions of national officials relate to the general needs of commerce, while those of state or municipal officials are related to the special transfer needs of a particular port. It is only in recent years that effective steps have been taken toward systematic port organization and development on this side of the Atlantic. Municipal or state ownership and control of waterfronts is essential to this end.

In the design of new ports, or what is more difficult, the adaptation of older ports to modern requirements for the economic movement of the world's products, there is required an exercise of ability of the highest grade.

The proper solution of the problems of transportation is one of the factors in the reduction of the cost of living. This increasing cost of living is partial measure of the increase of comfort demanded for all classes, and to that extent is an index of advancing civilization. From this point of view it is not a bad condition. However, to make its attendant hardships only temporary, and, in order to supply this increasing demand for better living without an undue increase of the burdens of the people, it is necessary to seek all possible means of reducing cost. With each section of the world producing that for which it is economically best fitted, and with the means of transportation and distribution developed to the highest capacity, the burdens of today will be greatly reduced. The port authorities of the world can have a large influence in hastening or retarding the hoped for solution.

Francis Lee Stuart, chief engineer of the Baltimore & Ohio Railroad, spoke on what he said should be entitled, "An Engineer's Thoughts on Some Parts of Port Development and Its Problems." Without discussing any phase of the Baltimore situation, except to say that he heartily concurred in the necessity for the com-

pletion of the 35-foot channel and for the construction of a ship canal from the Chesapeake to the Delaware, Mr. Stuart said he would devote himself to a discussion of general principles. The development of railroads had wrought vast changes in conditions which existed when cargoes were transferred between watercraft and horse-drawn vehicles. Now 75 per cent. of the business of the coastwise shipping companies of the ports of the United States is for trans-shipment from one port to another port for distribution by rail to interior points, or received by rail at a port for transportation to another port for distribution, and to a large extent the same is true as to ocean-going business. Ships have no investments in rights-of-way, and can leave a pier, port or country when business is unattractive. Their rates are not fixed by political commissions, but are made by competitive business conditions. Railroads, which are the larger co-partners or agents for the collection and distribution of freight for the water interests, and are pre-eminently as much a part of the port as the shipping, should be considered as one of the primary parts of a port.

Under the Federal valuation act, which Mr. Stuart believed would benefit the railroads and also the water interests, he would be surprised if it is not found that at least 30 per cent. of the capital of the trunk lines is invested in terminals in cities having water transportation and possibly 50 per cent. or more in terminals of all kinds in all cities. These investments are fixtures, immovable and inflexible. For this and other reasons he could not see that there is any rational reason for basing rate regulation on the cost of haul of a commodity between points on a large system, the entire truckage of which system represents only 50 per cent. of the whole investment. Unless railroads are allowed to earn attractive returns on their present investment as a surety of further returns on the additional capital needed to keep their facilities in pace with the country's growth, they will not be able to handle the normal expansion of the commercial interests of the United States, particularly at the terminals and ports.

As a remedy, the speaker believed piers should be publicly owned, and that a belt line should connect the piers with the industrial zones of a city. It is a problem, however, to carry out such plans and not reduce the value of the millions which private and corporate interests have invested. They should not be punished for having been a factor in the city's growth. The speaker denied that railroads fight canal or river improvements. Any improvement of transportation facilities—water, electric lines, river improvement, etc.—inherently increases the amount of rail transportation. There may have been criticism of the economic aspect of government assistance to water interests—that the amount of business encouraged did not compensate for the cost—but antagonism or criticism of such undertakings *per se* did not represent the men who are the brawn, sinew and brains of the railroad interests.

"Baltimore Harbor" was described by Oscar F. Lackey, who spoke of the municipal piers and improvements which have cost \$7,000,000; of the 106-foot marginal street on the south side and along the shores of the Middle Branch, and of the possession the city is taking of the undeveloped portions with all riparian rights lying between the street and the water, giving the city possession of the most desirable part of the harbor, which will be developed as future needs may demand. Also, a municipal belt railroad has been commenced, which in time will parallel the entire waterfront. There are 120 miles of waterfront on the Patapsco and tributaries adjacent to the channel approaches, all of which is open to development by industries needing bold water in front, high and healthy surroundings, with excellent railroad connections and trolley service close by. Almost within the city limits there are 37½ miles of most desirable waterfront, 31 miles of which is in use—5 miles being owned by the city, 10.5 miles by the railroads and 22 miles by private parties or corporations. The city owns 13 piers, the railroads 50 and private parties and corporations 149. Up to 1904 no systematic plan of development had ever been considered, and the people of Baltimore never had been called on for money for harbor improvements.

The natural advantages of Baltimore were mentioned as including geographical location, Baltimore being nearer by rail to the cities of the Middle West than any other Atlantic seaport, which gives an advantage

of lower freight rates. There is no safer port in the world. Navigation is not bothered by heavy fogs or strong currents, and in the most severe winters the port is open to commerce. It is 155 miles from the Atlantic Ocean, via the Chesapeake Bay. Beginning at the approaches to Baltimore there are 25¼ miles of an artificial or dredged channel, of a minimum width of 600 feet, and a depth of 35 feet at mean low tide. The channel bed is of such a character that once dug there is little or no maintenance required. Owing to favorable labor conditions, character of river bed, small rise and fall of tide and expansive waterfronts, Baltimore lends itself to development at a lower unit rate than does any other Atlantic port.

"Trade Organizations as a Benefit to the Commerce of the Port," an article prepared by Charles J. Cohen of Philadelphia, was read by George W. Norris, director of the Department of Wharves, Docks and Ferries, Philadelphia. The necessity of welding all the best elements of the manufacturing and mercantile interests of a community into a central organization, operating through separate bureaus, was declared to have been demonstrated by observation and experience, and a concrete illustration of this principle was given in a description of the effective work that is now being carried on in Philadelphia by its Chamber of Commerce.

An elaborate description was given of the Port of Los Angeles, California, by Dr. John P. Gilmer, harbor commissioner. With the aid of a map of the waterfront and of the city a graphic presentation was given of the various steps taken in the construction of a canal 20 miles long, by which Los Angeles has secured the facilities afforded by the Bay of San Pedro. The city limits were extended to include a strip of land with room sufficient to provide a magnificent waterway and room for railway and terminal developments on each bank of the canal.

"State Control Over Ports and Waterfronts" was the topic of a paper read by B. F. Cresson, Jr., chief engineer of the New Jersey Harbor Commission. Commenting on the advantage of public control and ownership of the waterfront, Mr. Cresson declared that public control to be effective should include the power to pass on plans for private development and this should include the right to forbid such work to be done as is deemed improper. Public ownership is useful and sometimes necessary, in order to encourage the private operation of public utilities created at public expense. A government, state or municipality can usually borrow money at a less rate of interest than a private individual or corporation, and does not necessarily have to realize a profit on its investment. It can build port facilities in advance of necessities, and thus encourage commerce, and it can build port facilities which may themselves be unprofitable, but whose operations may be useful and necessary for the welfare of the hinterland. However, public operation of port facilities, successfully undertaken in European countries, encountered difficulties through political conditions in this country, and the general experience here is that public operation has not favorably withstood comparison with private operations. Nevertheless, there are many instances of the necessity and usefulness of public operation, and it may become necessary to extend this policy in view of present industrial and transportation conditions.

Mention was made of conditions in the port of New York, the greatest in point of tonnage in the world, with a length of waterfront lying within the state of New York alone amounting to 550 miles. Public ownership of waterfront facilities has been undertaken, and public control of the development of the waterfront is complete, but public operation of port facilities has not been undertaken except in the operation of municipal ferries.

On the other hand, in the New Jersey portion of New York harbor there has been up to the present year no form of public control. Under an act of the last legislature the New Jersey Harbor Commission came into existence in April of this year. The state is divided into five zones, each in charge of a commissioner, and the commission has powers of supervision and control of improvements to be made. Up to September 1st, 33 projects involving the development of the waterfront had been submitted; the commission had been consulted by private individuals and municipalities, and it has aided in the establishment by the Federal Government of workable harbor lines, etc. A

recital of the law under which the commission is working was given as embodying what the New Jersey Harbor Commission believes should be the policy of state control over ports and waterfronts.

Judge C. E. Rennesberg, Port Commissioner of Seattle, gave a description of Seattle's great port and also described some of the difficulties Seattle is experiencing in securing favorable switching charges. At the instance of Judge Rennesberg a resolution was adopted before the meeting closed providing for an investigation as to the conditions named.

"Types of American Port Construction" was the subject of a paper by William Joshua Barney, consulting engineer, New York. Mr. Barney's paper consisted of an illuminating description of all of the various kinds of harbor improvements in the principal ports of the United States.

"Lake Ports" was the subject of a lecture by Harry C. Gahn, secretary of the Cleveland River and Harbor Commission. By means of lantern slides Mr. Gahn showed the harbor improvements at the most important ports on the Great Lakes and gave illustrations of loading and unloading devices and of ore and coal-carrying vessels.

"A Statement Relative to Port Statistical Facts" was given by T. M. Robertson, Department of Commerce, Washington, D. C.

Los Angeles, California, was chosen as the place for the next meeting, the date to be fixed by a majority of members through referendum. The election of officers for the ensuing year resulted as follows:

President—Oscar F. Lackey, Baltimore.  
First Vice-President—Col. G. W. Goethals, Panama.  
Second Vice-President—George W. Norris, Philadelphia.  
Third Vice-President—Harry Pillans, Mobile.  
Fourth Vice-President—Ernest M. Loeb, New Orleans.  
Fifth Vice-President—J. F. Gilmer, M. D., Los Angeles.  
Secretary—William Joshua Barney, New York.  
Treasurer—Harry C. Gahn, Cleveland.  
Directors—Gen. H. M. Chittenden, Seattle; J. J. Dwyer, San Francisco; Col. William M. Black, U. S. A., New York; W. R. Mayo, Norfolk; T. M. Robertson, Washington; B. F. Cresson, Jersey City; Edward F. McSweeney, Boston.

### Voted for Improvements.

Brooks County Industrial Club,  
Quitman, Ga., September 10.

#### Editor Manufacturers Record:

On last Monday, in the midst of the present unusual business depression, a bond election was overwhelmingly carried in Quitman for free schools, new electric-light and water-works plant and city paving. Only eight votes were cast against the bonds.

The Brooks County Industrial Club was solidly behind the bond election, and two months ago had appointed an aggressive committee to see that the bonds carried. The school issue means the levying of an additional four mills, and makes Quitman an absolutely free school center without even an entrance or enrollment fee.

There will also be built 12 miles of sidewalk, which will pave practically every unpaved sidewalk in the city. All sidewalks and street paving work is put down without any assessment on property-owners, the city paying the total cost.

E. G. CLARKE,  
General Secretary.

### Seeking Site for Paper Mill.

The Economic Power & Products Co., Lafayette Building, Philadelphia, has appointed a committee of three directors to visit the cotton belt for the purpose of seeking a suitable location for the company's first plant for manufacturing paper pulp from cotton stalks. This committee is composed of Messrs. M. W. Marsden, William D. Miller and John B. Mayer.

In the year ended August 31 truck crops valued at about \$8,000,000 were shipped in 4,088,439 packages, according to the estimate of the Southern Produce Co.



# Cotton Crop of the United States for 1913-14

By COL. HENRY G. HESTER, Secretary of the New Orleans Cotton Exchange.\*

The cotton crop of the United States for the year ending with the close of August, 1914, amounted to 14,588,591 bales, showing an increase over that of 1912-13 of 421,476 bales; a decrease under that of 1911-12 of 1,549,835 bales, and an increase over that of 1910-11 of 2,468,496 bales.

The entire increase over last year was in the "Other Gulf" and Atlantic States, the "Other Gulf" showing a gain of 16 per cent., the Atlantic a gain of nearly 14 per cent., while Texas dropped off nearly 20 per cent.

The figures (in round numbers) are: Texas, under last year, 954,000; "Other Gulf States" (embracing Louisiana, Mississippi, Arkansas, Tennessee, Oklahoma, Missouri, Arizona, California, Kansas, New Mexico), over last year, 592,000; the group of Atlantic States (including Alabama, North Carolina, South Carolina, Georgia, Florida, Kentucky, Virginia), over last year, 783,000 bales.

In grade the crop has been the poorest since the year of 1906-1907; in fact, there has hardly been a year's growth in the past that has contained such a large proportion of poor and undesirable qualities. While the average grade is stated as strict low middling, the leaning has been rather under than over that grade; thus the average for Texas and Oklahoma was low middling to strict low middling; in the other Gulf States it was strict low middling, the New Orleans receipts having been barely strict low middling, while the averages for the Atlantic States, which fared better than the rest of the Cotton Belt, ranged from barely middling to fully middling.

The average price for middling cotton for this year has been 13.49 cents per pound, comparing with 12.20 last year, 10.16 the year before and 14.60 in 1910-11; and the average commercial value per bale was \$68.06, against \$63.59 last year, \$51.45 the year before and \$5.69 in 1910-11.

## Value of Commercial Crops.

The total value of the crop, compared with the previous four years, is as follows:

	Bales.	Value.
1913-14.....	14,588,591	\$957,902,336
1912-13.....	14,167,115	\$70,035,059
1911-12.....	16,138,426	\$10,280,764
1910-11.....	12,120,065	\$917,355,589
1909-10.....	10,609,668	\$778,894,095

These values are based on actual transactions from week to week and month to month as the cotton crop was marketed, and compared with computations made by the secretaries of other exchanges at leading trade centers.

The values stated for the commercial crops are for cotton only, and do not, of course, include the value of the cottonseed, which, however, constitutes an important item. For example, the value of the crop for the past year, as stated, was \$957,902,336, to which, if the value of the cottonseed is added, the actual wealth-producing capacity of the Southern cotton farms will be \$1,114,502,336. Last year the total value, including seed, was \$998,425,059.

The foregoing values are different from those stated by the Census Department, which may be accounted for in part by the fact that the Government data is made up several months before the season closes, when a considerable percentage of the crop remains to be disposed of.

## Commercial Crop by States.

The commercial crop by States in thousands of bales for the past five years has been:

	1913-14.	1912-13.	1911-12.	1910-11.	1909-10.
Alabama.....	1,530	1,390	1,738	1,209	1,078
Arkansas.....	1,081	820	941	846	718
Florida.....	70	62	95	68	66
Georgia.....	2,454	1,920	2,878	1,833	1,927
Louisiana.....	458	390	460	273	292
Oklahoma.....	877	1,051	1,090	924	566
Mississippi.....	1,336	1,042	1,221	1,239	1,121
North Carolina.....	894	974	1,194	794	676
South Carolina.....	1,462	1,281	1,732	1,231	1,184
Tennessee, etc.....	518	375	573	424	316
Texas.....	3,908	4,862	4,827	3,250	2,676
Total crop, bales.....	14,588	14,167	16,138	12,120	10,610

\*From his annual report.

## American Mills.

American mills have had an active year. Both North and South more cotton has been consumed and there was an increase of nearly 700,000 in the total of active spindles up to the close of July. All of the mills however, did not work to full capacity, hence there was room for still larger consumption. In the South, the bumper consumption of last year was exceeded, but the increase was curtailed during the closing months, the August total especially showing a sensible drop.

Aside from the permanently idle mills, over 900,000 Southern spindles in active mills were not in use for a good part of the time, and, in addition, the returns for August show 532,431 spindles stopped for the entire month.

Towards the close uncertainty concerning results of the European war exerted an unsettling influence, and the mills are now inclined to pursue a "hand-to-mouth" policy in the purchase of raw material. The possibility of buying "distressed cotton" from the surplus expected to be thrown upon the market because of the stoppage of foreign spindles is a predominating feature. On the other hand, the August movement into sight has been the smallest on record, amounting, in round figures, to 67,000 bales, against 427,000 last year and 457,000 the year before.

Of the new crop, only 30,000 bales have reached the ports, less than one-eighth of the average August marketing of new crop for the past three years. Hence actual development of the situation as between producers and consumers will not fully materialize until there is a freer movement of the crop. The prevailing impression, however, is that the pressure on American spindles to offset in part the stoppages abroad promises domestic consumption for the coming year largely in excess of what has ever yet been recorded.

The consumption of American cotton (including linters) by Northern and Western mills has been 2,625,000 bales, against 2,617,000 last year. Including foreign cotton, the consumption, compared with last year, has been as follows (in thousands):

	This year.	Last year.
Consumption, North and South—American.....	5,662	5,587
Consumption, North and South—Foreign.....	269	218
Total consumed, North and South—All kinds.....	5,931	5,805
Increase over last year, 126,000.		

## Cotton Takings by American Mills.\*

The following table shows the takings of American cotton for a number of years past:

Year ending August 31.	Northern mills. Bales.	Southern mills. Bales.	Total Bales.	Crop. Bales.
1890.....	1,799,258	546,894	2,346,152	7,311,392
1891.....	2,027,362	604,661	2,632,023	8,652,597
1892.....	2,190,766	696,090	2,876,846	9,035,379
1893.....	1,687,286	743,948	2,431,134	6,700,365
1894.....	1,401,173	718,515	2,119,688	7,549,817
1895.....	2,083,839	862,838	2,946,677	9,091,251
1896.....	1,600,271	904,701	2,504,972	7,157,346
1897.....	1,804,680	1,042,671	2,847,351	8,757,564
1898.....	2,211,740	1,231,841	3,443,581	11,199,994
1899.....	2,190,095	1,399,399	3,589,494	11,274,940
1900.....	2,068,390	1,597,112	3,665,412	9,436,416
1901.....	1,967,570	1,629,931	3,597,501	10,393,422
1902.....	2,050,774	1,937,971	3,988,745	10,690,680
1903.....	1,967,635	2,096,729	4,064,364	10,727,559
1904.....	2,026,967	1,919,252	3,946,219	10,011,374
1905.....	2,282,145	2,163,505	4,445,650	13,565,885
1906.....	2,349,478	2,374,225	4,723,703	11,345,988
1907.....	2,526,390	2,439,108	4,965,498	13,510,982
1908.....	1,896,661	2,193,277	4,089,938	11,571,966
1909.....	2,680,118	2,559,873	5,239,991	13,825,457
1910.....	1,963,904	2,341,393	4,305,297	10,609,668
1911.....	1,993,576	2,363,616	4,357,192	12,120,065
1912.....	2,631,432	2,744,067	5,375,499	16,138,426
1913.....	2,488,377	2,969,559	5,457,936	14,587,511
1914.....	2,513,622	3,037,308	5,550,930	14,588,591

\*American cotton.

## World's Consumption of American Cotton.

War conditions in Europe make it impossible to obtain accurate data in reference to port and mill stocks on the Continent, and the consumption of American cotton can, therefore, only be stated approximately.

In England it is estimated that 75 per cent. of the spindles were shut down in August, and at least that amount, if not more, on the Continent; hence the world's consumption has been abnormally curtailed by something like 700,000 or more bales. In other words, while the total consumption foots up 14,320,000, it is fair to presume that under normal conditions it would have reached over 15,000,000, if not 15,100,000.

## Net Receipts of Cotton at United States Ports. (As per form in use by the Cotton Exchanges.)

	1913-14. Bales.	1912-13. Bales.
New Orleans.....	1,890,758	1,736,069
Galveston.....	3,365,460	4,035,114
Port Arthur and Texas City.....	513,439	805,313
Mobile.....	431,918	230,069
Pensacola.....	165,906	125,633
Savannah.....	1,822,370	1,306,864
Charleston.....	423,521	310,253
Wilmington.....	390,023	342,963
Norfolk.....	596,827	692,933
Baltimore.....	103,810	81,661
New York.....	6,732	15,326
Boston.....	21,678	46,222
Philadelphia.....	5,491	8,326
Newport News, etc.....	30,176	15,881
Brunswick.....	147,552	119,870
Laredo, Eagle Pass, etc.....	285,173	240,560
San Francisco, etc.....	43,869	49,819
Seattle.....	177,048	257,220
Tacoma.....	42,540	36,456
Minor ports.....	35,731	70,559
Total port receipts.....	10,539,555	10,189,671

NOTE.—Light-weight round bales have in all cases been included in receipt as half-bales.

\*Total receipts at San Francisco, 184,488, including 6240 received from Galveston and counted as net at the latter.

## Exports.

	Great Britain. Bales.	France, and Channel. Bales.	Continent. Bales.	Total. Bales.
New Orleans.....	897,728	187,142	617,130	1,702,000
Galveston.....	1,068,987	315,968	1,469,825	2,845,780
Mobile.....	145,819	73,997	151,865	371,681
Pensacola.....	53,996	48,947	61,212	164,155
Savannah.....	229,368	240,960	774,742	1,245,100
Charleston.....	118,943	5,030	181,434	305,407
Wilmington.....	73,924	102,784	178,895	355,603
Norfolk.....	48,741	.....	87,639	136,380
Baltimore.....	57,965	13,294	102,060	173,329
New York.....	121,975	19,038	218,408	359,421
Boston.....	85,567	.....	9,138	94,705
Philadelphia.....	43,301	.....	15,499	58,800
Newport News.....	.....	.....	369	369
Brunswick.....	89,608	22,954	155,479	268,041
San Francisco.....	.....	.....	179,255	179,255
Seattle.....	.....	.....	40,520	40,520
Tacoma.....	.....	.....	34,533	34,533
El Paso, etc.....	369,181	38,752	129,462	537,395
Totals.....	3,424,213	1,068,896	4,390,894	8,883,903
Last year.....	3,596,641	995,592	4,018,486	8,610,719
Year before.....	4,243,639	1,198,171	5,041,652	10,506,465

\*Included under Continent are exports to Mexico, Japan, China and East India, which are to Mexico this year 9370 from New Orleans, 7230 from Galveston, 11,178 from Texas City, — from New York, 298 from Laredo, El Paso, Eagle Pass, etc., a total of 28,076, against 23,870 last year and 16,527 the year before last; to Japan and China, 345,669 from San Francisco, Portland and other ports, against 383,345 last year and 514,543 the year before, and to East India, — from Savannah and New York, against 3555.

## Cotton Consumption in the South.

In volume of business, Southern cotton mills have had the best year on record, the number of bales consumed exceeding last season's total (which up to that time was the largest) by nearly 68,000 bales.

This, however, does not represent the full consuming capacity of the Southern mills, as for a good part of the year upwards of 900,000 spindles in active mills were not in use, and during the month of August there was a total stoppage of mills embracing 532,431 spindles.

The balance compared with the North is still more in favor of Southern spindles. In the North the bales consumed (American only) were 2,625,000; in the South, 3,037,000, an excess in the South of 412,000. The record shows that in the mills in operation there has been an increase of 544,211 spindles, and there are 180,160 spindles in course of erection and being added to old mills. The total number of bales consumed for the year is 3,037,308, against 2,969,559 last year and 2,744,067 the year before, an increase over last year of 67,749, and over the year before of 293,241.

Nearly all the mills in the South have reported to me direct, but few refusing, and of these I have obtained data sufficiently close to cover all the purposes of an actual census. In fact, they used but an infinitesimal fraction of the total quantity consumed. In addition, I have secured returns from every woolen mill, batting and mattress factory and every knitting mill that has spindles and used raw cotton. In fact, I have knocked at the doors of every institution of any kind in the South that uses raw cotton, and have invariably met with kind and prompt responses.

## Consumption of Foreign Cotton in the South.

	Mills.	This year. Bales.	Last year. Bales.
Alabama.....	2	175	202
Georgia.....	1	1,955	2,294
Kentucky.....	5	.....	.....
North Carolina.....	14	7,567	7,832
South Carolina.....	5	924	1,152
Tennessee.....	3	75	82
Virginia.....	.....	.....	.....
Total.....	25	10,694	11,562

Equal in bales of American weights to 12,988 this year and 14,014 last year.

## Southern Spindles Consuming Foreign Cotton.

	In operation.
Alabama .....	2,064
Georgia .....	10,886
Kentucky .....	47,382
North Carolina .....	9,136
South Carolina .....	69,468

Total in operation, 69,468 spindles, against last year 65,449.

The record of spindles since 1860 is of interest:

## Southern Cotton Spindles.

1860 .....	295,359
1870 .....	338,960
1880 .....	561,360
1890 .....	1,819,291
1895 .....	3,177,310
1900 .....	6,267,163
1901 .....	6,531,894
1902 .....	7,512,982
1903 .....	8,248,275
1904 .....	8,615,369
1905 .....	9,205,949
1906 .....	9,760,192
1907 .....	10,538,095
1908 .....	10,661,308
1909 .....	11,255,787
1910 .....	11,583,359
1911 .....	11,897,414
1912 .....	12,318,356
1913 .....	12,819,333
1914 .....	13,199,426

## Roster of Mills.

Total number last year .....	841
Crossed out and merged into other concerns .....	9
New and uncompleted added to list .....	9
Total number cotton mills in the South .....	841

The record of spindles in the South shows:

	This year.	Last year.
Total in operation .....	12,834,462	12,290,251
Idle .....	184,804	226,422
New, not completed .....	180,160	306,660
Grand total .....	13,199,426	12,819,333

showing an increase of spindles, active, idle and not complete, over last year of 380,093 and a net gain of spindles at work of 544,211.

As indicated by the tables annexed, the total consumption in all the mills, old and new, for the year was 3,037,308 bales, against 2,969,559 last year and 2,744,067 for the season of 1911-1912, an increase over last year of 67,749 and an increase over the year before of 293,241.

## Southern Cotton Mills in 1913-1914.

## MILLS.

	Total.	In operation.	Idle.	New, not completed.
		Old.	New.	
Alabama .....	70	68	..	2
Arkansas .....	2	1	..	1
Georgia .....	156	150	..	6
Kentucky .....	6	4	..	2
Louisiana .....	5	4	..	1
Mississippi .....	19	15	..	4
Missouri .....	2	2	..	..
N. Carolina .....	341	331	4	6
S. Carolina .....	189	188	..	1
Tennessee .....	23	19	..	4
Texas .....	15	13	..	2
Oklahoma .....	1	1	..	..
Virginia .....	12	12	..	..
Total .....	1841	1810	4	27
Last year .....	841	803	1	37
Year before .....	842	796	3	43

\*Including mills commenced this year and those under this head last year not yet completed.  
†Including one mill for foreign cotton in operation.

## LOOMS.

	Active.	Idle.	Not complete.	Total.
Alabama .....	18,994	..	10	19,004
Arkansas .....	160	..	..	160
Georgia .....	43,085	594	60	43,649
Kentucky .....	1,350	..	..	1,350
Louisiana .....	1,014	1,302	..	2,316
Mississippi .....	3,127	1,625	..	4,752
Missouri .....	730	..	..	730
North Carolina .....	63,594	507	1,800	65,901
South Carolina .....	110,690	12	96	110,798
Tennessee .....	5,126	..	..	5,126
Texas .....	2,942	300	..	3,242
Oklahoma .....	..	..	..	..
Virginia .....	12,744	..	..	12,744
Total .....	263,566	4,250	1,966	269,772
Last year .....	256,756	4,894	8,373	270,023
Year before .....	249,479	5,224	6,159	260,862

## SPINDLES.

	Total.	In operation.	Idle.	New, not completed.
		Old.	New.	
Alabama .....	1,093,331	1,079,459	..	14,472
Arkansas .....	13,000	6,000	..	7,000
Georgia .....	2,168,800	2,119,588	..	33,088
Kentucky .....	94,628	94,628	..	..
Louisiana .....	79,435	38,683	..	40,752
Mississippi .....	181,396	127,500	..	53,896
Missouri .....	31,896	31,896	..	..
North Carolina .....	3,924,622	3,761,118	10,040	31,212
South Carolina .....	4,688,454	4,682,086	..	1,512
Tennessee .....	314,064	286,264	..	5,704
Texas .....	126,028	114,028	..	12,000
Oklahoma .....	5,712	5,712	..	..
Virginia .....	477,460	477,460	..	..
Total .....	13,199,426	12,824,422	10,040	184,804
Last year .....	12,819,333	12,288,651	1,600	226,422
Year before .....	12,318,356	11,709,354	34,200	258,320

†Includes spindles being added to old mills, as well as those in new concerns.  
‡Including spindles added to old mills, less spindles

thrown out during year, and new not complete mills of last year which started operations this season.  
\*Exclusive of 69,468 spindles using foreign cotton, say 2064 in Alabama, 10,886 in Georgia, 47,382 in North Carolina, 9136 in South Carolina.

## Southern Consumption of American Cotton, Year Ending August 31.

(Actual figures reported by the mills.)

States.	*No. mills.	†Looms.	‡Spindles.	Bales
Ala.	68	18,994	1,079,459	290,368
Ark.	1	160	6,000	6,532
Ga.	150	43,085	2,119,588	658,725
Ky.	6	1,350	94,628	27,742
La.	4	1,014	38,683	19,209
La.	15	3,127	127,500	33,000
Miss.	2	730	31,896	23,323
Mo.	324	63,594	3,771,153	908,723
N. C.	188	110,690	4,682,086	815,789
S. C.	19	5,126	286,264	89,496
Tenn.	13	2,942	114,028	61,233
Tex.	1	..	5,712	10,317
Va.	12	12,744	477,460	91,532
Totals .....	813	263,556	12,834,462	3,037,308
Less consumed and taken from Southern seaports and included in port receipts .....				172,490
Net consumption to be added to crop .....				2,864,818

\*Mills in operation only. For total in South see other table.  
†Employed in mills in operation. For total looms and spindles in South see other table.  
‡Exclusive of one mill in operation using only foreign cotton in North Carolina.  
§Spindles working American cotton only; for statement foreign see elsewhere.

## Consumption by Southern Mills in Pounds.

The following shows the consumption of American cotton by Southern mills during the past two years in pounds of lint cotton and the average net weights per bale:

	—Pounds—	—Average Weights.*—
	This year.	Last year.
	Per bale.	Per bale.
Alabama .....	140,634,564	145,543,776
Arkansas .....	3,322,800	5,150,250
Georgia .....	311,751,378	309,274,299
Kentucky .....	13,564,884	13,215,227
Louisiana .....	9,190,036	7,451,400
Mississippi .....	15,706,702	16,005,154
Missouri .....	11,482,618	11,769,050
N. Carolina .....	423,351,405	409,568,253
S. Carolina .....	381,566,113	367,200,459
Tennessee .....	42,885,485	39,866,689
Texas .....	30,629,984	30,857,976
Oklahoma .....	5,181,245	4,298,345
Virginia .....	43,852,884	43,657,898
Total .....	1,433,100,098	1,403,858,781

\*Exclusive of bagging and ties.

†Not including foreign cotton.

## United States Spinners' Takings of American Cotton.

	—1913-1914—	—1912-1913—
Total crop United States .....	14,588,591	14,167,115
Stocks at ports beginning of year .....	224,688	282,959
Total supply .....	14,823,279	14,450,074
Exported during year — (American) .....	8,883,993	8,610,719
Sent to Canada .....	148,564	147,152
Total .....	9,002,557	8,757,871
Less American cotton returned from foreign ports:		
To New York .....	1,774	303
New Orleans .....	1,275	116
Boston .....	314	60
Various .....	3,363	469
Burnt at ports .....	9,029,194	8,757,402
Stock at close of year .....	11,757	8
Total takings for consumption United States .....	231,398	234,688

Total takings for consumption United States .....

Taken by spinners in Southern States—total .....

Taken by Northern spinners .....

In accordance with action of convention of cotton exchanges held at Augusta, Ga., in May, 1914, the cotton year hereafter will date from August 1 instead of September 1, as formerly.

## The Cotton Movement.

In his report for September 11, Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 42 days of the present season was 225,349 bales, a decrease under the same period last year of 609,460 bales. The exports were 29,745 bales, a decrease of 346,240 bales. The takings were, by Northern spinners, 70,072 bales, a decrease of 42,146 bales; by Southern spinners, 88,798 bales, a decrease of 141,230 bales.

During the past seven years \$3,550,000 have been expended for street improvements in Little Rock, Ark., and \$8,880,000 upon fireproof buildings in the downtown district of the city.

## HOW A BIG INDUSTRY WAS WON.

Many Improvements Under Way at Chattanooga.

Chamber of Commerce,  
Chattanooga, Tenn., September 10.

## Editor Manufacturers Record:

To avoid possibility of losing an industry, itself large, but more important as a begetter of other industries, the Chattanooga Chamber of Commerce broke its rule in the instance of the Chattanooga Gas & Coal Products Co. by furnishing that concern a 15-acre site in a suburb. The company is a foreign one, although its name includes the word Chattanooga, being financed by New York bankers. It will, according to terms of a contract entered into with the Chamber, begin construction of the ovens on or before September 30 and complete them by June 1, 1915.

Officers of the Chamber, in deciding to supply the site, were actuated by several motives. It is firmly believed by them that the ovens, producing millions of feet of gas daily and other by-products in large quantities, will be fruitful in attracting new industries. Construction of the plant this fall and winter will give employment to many people at a time when there might be a scarcity of employment, and will put new money into circulation when every community in this country needs the impetus of that character.

In recent years the people of Chattanooga have given hundreds of thousands by popular subscription to a variety of projects, \$50,000 each in 1913 for the United Confederate Veterans' reunion and Grand Army encampment capping the climax. These circumstances, coupled with the war scare and temporary financial depression, made it difficult for the Chamber to raise money for the site, but it was accomplished, and by reason of the difficulties surrounding the campaign is considered all the more remarkable.

People, in and out of Chattanooga, who have been watching the course of events there for years with an abiding faith in the ultimate future of the community, are beginning to see more tangibly the fruition of their hopes. Even at such a time as this, when conservatism is almost dictated by the European situation.

Chattanooga is humming with improvements in progress or contemplated.

A new half-million dollar bridge is being constructed over the Tennessee River.

Viaduct over tracks traversing an important traffic artery is rising day by day.

The city-county hospital will be improved to extent of \$100,000 soon.

Southern Railway construction work near the city is felt there.

Queen & Crescent Railroad is building car shops in its yards.

Many smaller building operations are on foot.

With decided improvement of the Tennessee River in recent years by the Government, Chattanooga is determined to profit thereby, as is her right, being one of the most important points on the navigable portion of that stream. The Chattanooga Manufacturers' Association has laid before the Interstate Commerce Commission its claims for equalization of freight rates on material which is hauled on the river to distant points and delivered to railroads. Victory is predicted, and this would have an important bearing on the city's future expansion industrially and commercially.

From even this hasty survey it will be seen that the coke ovens, supplying another kind of cheap power for manufacturing, as well as by-products, that will bring new industries, fits into a long chain of conditions and resources that indelibly connect Chattanooga with increased success and growth. A few links in this chain are unlimited coal and iron, splendid transportation by rail and water, abundant cheap hydro-electric power, cheap fuel gas from the by-product plant and accessibility to a wide variety of timber for woodworking plants.

HAL F. WILTS.

Municipal authorities and business men of Mobile will ask the next Legislature of Alabama to cede to the city "made" lands in Mobile Bay thrown up in the improvement of a 27-foot channel as a preliminary to building a municipal dock system.



# Modern Coal Handling at Charleston

ADVANTAGES IN THE PLANT UNDER CONSTRUCTION FOR THE SOUTHERN RAILWAY.

The new coal-handling plant being built for the Southern Railway terminal at Charleston, S. C., will incorporate a novel feature in the arrangement for putting coal aboard ship after taking it from the railroad cars by the car dumper.

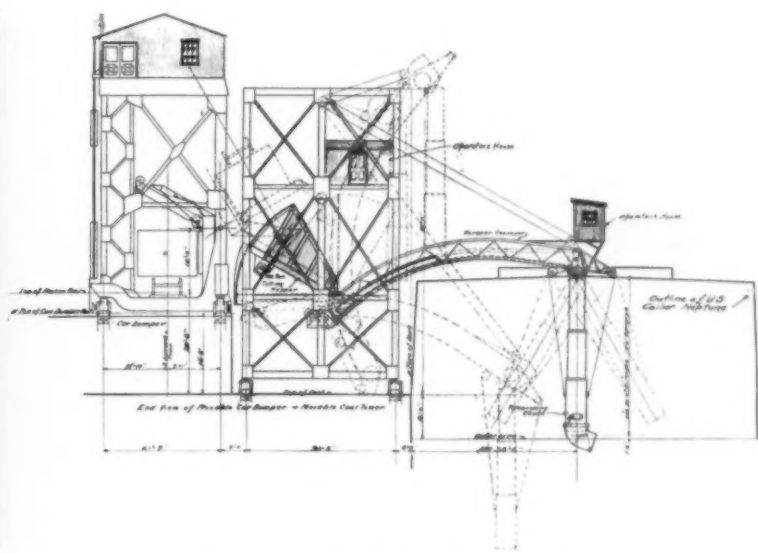
The dumper itself will be the well-known type used at the recently constructed coal piers at Norfolk, excepting that it will be mounted on wheels and will be moved by power along the dock with the coal-loading tower. This tower provides a means of loading coal directly from the car dumper to the ship without the necessity of elevating the coal to the top of a stationary coal pier, as has generally been the custom. In other words, machinery is introduced to take the place of gravity loading. It is expected that its results will be fully equivalent in speed of loading per unit, and that the coal will be handled much more directly and the breakage thereby reduced to a minimum. The handling

of handling 30 cars per hour, and is designed to discharge coal from any type or size of open-top cars in present use. The loading tower is capable of maintaining the capacity of the car dumper.

The movable car dumper will be of the Hulett type, which consists of a steel framework carrying operating machinery in a house at the top of the machine. Ropes from winding drums, which are provided with the necessary gearing to connect them to the motors, are connected to the rotating cradle upon which the car is placed for dumping. These motors are under control of the operator, whose cab is located at the incoming end of the car dumper, where he may have a clear view of the work. The rotating cradle is provided with clamps for securing the car in position on the cradle during the motion of rotation. These clamps are automatically adjustable to different sizes of cars and are operated by counterweights which travel in guides at

of coal, and is arranged at the forward end, so that it is possible to raise or lower the rear end to receive the coal. When the coal is received in this hopper, the flow from the hopper to the conveyor is regulated by raising or lowering the back of the hopper, thus allowing the coal to be discharged onto the conveyor as desired.

The conveyor is carried on a hinged boom supported in the forward portion of the tower framework. This boom is arranged so that it may be raised or lowered by means of ropes attached to the outer end and to the top of the tower. When discharging into boats the outer end of the boom is lowered to the proper position, so that the telescopic chute extends through the hatch opening. In the extended position this boom is of sufficient length so that the telescopic chute is approximately 36 feet 6 inches forward of the front runway of the tower. The rear end of the boom is so designed, however, that the boom may be retracted in order to provide a shorter reach when discharging coal into boats of small beam. This makes a very flexible arrangement, as it is possible to extend and elevate the boom to discharge coal into boats of large beam with high hatches, or it may be lowered and retracted to discharge into boats of small beam with low hatches, the result in



SIDE ELEVATION AND VIEW OF CAR-DUMPER PLANT IN COURSE OF ERECTION AT CHARLESTON, S. C., FOR THE SOUTHERN RAILWAY.

of fragile coals in carload lots without breakage is a very desirable feature, and one of the points carefully considered by the Southern Railway people.

## Coal-Handling Plant.

This plant will consist essentially of a movable loading tower and a movable car dumper, mounted on tracks located on the coal pier. The tracks for the loading tower will be located on the top of the pier. The car dumper will be carried on a steel trestle and will be designed to travel lengthwise of the dock a distance of approximately 300 feet. This trestle upon which the car dumper travels will be of sufficient height to elevate the rails of the car dumper approximately 17 feet 8 inches above the top of the dock. The loading towers will be designed to travel along the dock a distance of 100 feet opposite to the car dumper trestle. The yard tracks for the road cars will be carried on trestles which will form a continuation of the car dumper trestle, and in operation the loaded cars will be brought from the storage yard to the car dumper by means of a yard locomotive. The locomotive will spot the loaded cars on the cradle of the car dumper, which has first been placed in a position opposite the loading tower. The car dumper will rotate the car, discharging the contents into a receiving hopper on the loading tower, and this receiving hopper will, in turn, discharge the coal onto a steel flight conveyor carried on a boom attached to the tower. This conveyor will transfer coal to its outer end, which terminates into a telescopic chute, extending through the hatch opening into the cargo hold. The chute terminates at its lower end in a rotating trimmer, which can be revolved to any position for discharging coal, as desired. The telescopic chute is also capable of being swung athwart ships in order to discharge the coal to the sides of the hold. The car dumper is capable

of the rear side of the framework. Their action is entirely automatic in every respect, and they require no attention from the operator.

Each end of the car dumper framework is provided with an incline approach up which the cars are pushed by the yard locomotive when being placed on the car dumper cradle. The discharge end of the car dumper is provided with a similar incline, down which the cars run after being dumped and pushed out of the cradle. The points of these approaches are provided with flanges, which keep them in accurate alignment with the tracks for the road cars. After a car has been dumped it is displaced by the incoming loaded car and runs down the discharge track to a switchback and thence to the empty storage yard. The car dumper is mounted on six four-wheel equalized trucks, designed to travel on four runway rails arranged in pairs 24 inches center to center, the front and back runway being spaced 21 feet 9 inches centers. Four of these trucks are provided with gears, which are connected to the travel motor located in the house at the top of the framework. This machine is electrically operated throughout and is provided with all modern safety devices. The cradle is rotated by means of two motors of 200 horse-power each, and the machine is traveled by means of one 100-horse-power motor. All controllers are of the magnetic switch type, and those for the cradle motors are provided with dynamic braking attachment for controlling the lowering of the cradle after dumping cars.

The loading tower, which is designed to travel along runways between the car dumper and the face of the pier, consists of the steel framework mounted on trucks and provided with a hopper at the rear for receiving coal as it is dumped out of the cars by the car dumper. This hopper is of sufficient size to receive a full carload

each case being that the coal is not elevated beyond the requisite point to discharge through the hatch opening, and consequently excessive drop is avoided. When out of service the boom is drawn up and the telescopic chute folded in such a way as to provide clearance for the rigging of ships lying alongside the pier, also to provide clearance, if necessary, when moving the machine from one hatch to another.

This machine is electrically operated throughout, and the motions are controlled by two operators, one located at the outer end of the boom, who controls the scraper, telescopic chute and trimmer, and another operator located on the tower, who controls the hoisting or lowering of the boom, the tilting of the receiving hopper and the moving of the machine along the pier.

The boom hoist and hopper hoist are operated by one 100-horse-power motor, the gearing being provided with clutches to engage either function. The boom-retracting and tower-moving motion are controlled by one 65-horse-power motor. These motors are located in a machinery-house on the tower framework. The conveyor is operated by an independent motor which is mounted on the boom and connected to the sprockets at the outer end of the boom. The conveyor consists of two heavy roller link chains, carrying steel flights which are approximately 2x8 feet long. These flights are spaced three feet apart on the chains and are arranged to slide the coal through a steel trough on the boom at a speed of approximately 150 feet per minute.

The telescopic chute at the end of the boom is raised and lowered or swung athwart ships by means of ropes operated by a 25-horse-power motor located at the end of the boom. This telescopic chute is made so that it can be extended full length when discharging the first coal into the hold, and as the height of the coal increases the chute may be drawn up and telescoped so as to mini-

## Southern Spindles Consuming Foreign Cotton.

	In operation.
Alabama .....	2,064
Georgia .....	10,886
Kentucky .....	47,382
North Carolina .....	9,136
South Carolina .....	69,468

Total in operation, 69,468 spindles, against last year 65,449.

The record of spindles since 1860 is of interest:

## Southern Cotton Spindles.

Year	Spindles
1860.....	295,359
1870.....	338,860
1880.....	561,360
1890.....	1,819,291
1895.....	3,177,310
1900.....	6,267,163
1905.....	6,531,894
1910.....	7,512,982
1911.....	8,248,275
1912.....	8,615,369
1913.....	9,205,949
1914.....	9,760,192
1915.....	10,598,065
1916.....	10,661,308
1917.....	11,255,787
1918.....	11,583,359
1919.....	11,897,414
1920.....	12,318,356
1921.....	12,819,333
1922.....	13,199,426

## Roster of Mills.

Total number last year.....	841
Crossed out and merged into other concerns.....	9

New and uncompleted added to list.....	9
----------------------------------------	---

Total number cotton mills in the South..... 841

The record of spindles in the South shows:

	This year.	Last year.
Total in operation.....	12,834,462	12,254,251
Idle .....	184,304	226,422
New, not completed.....	180,160	306,660

Grand total..... 13,199,426 12,819,333

showing an increase of spindles, active, idle and not complete, over last year of 380,093 and a net gain of spindles at work of 544,211.

As indicated by the tables annexed, the total consumption in all the mills, old and new, for the year was 3,037,308 bales, against 2,969,559 last year and 2,744,007 for the season of 1911-1912, an increase over last year of 67,749 and an increase over the year before of 293,241.

## Southern Cotton Mills in 1913-1914.

## MILLS.

	Total.	In operation.	Idle.	New, not completed.
		Old.	New.	
Alabama .....	70	68	..	2
Arkansas .....	3	1	..	1
Georgia .....	156	150	..	6
Kentucky .....	6	4	..	2
Louisiana .....	6	4	..	2
Mississippi .....	19	15	..	4
Missouri .....	2	2	..	..
N. Carolina .....	341	331	4	2
N. Carolina .....	189	188	1	1
Tennessee .....	23	19	..	3
Texas .....	15	13	..	2
Oklahoma .....	1	1	..	..
Virginia .....	12	12	..	..
Total .....	1841	810	4	22
Last year .....	841	803	1	30
Year before .....	842	796	3	34

\*Including mills commenced this year and those under this head last year not yet completed.

†Including one mill for foreign cotton in operation.

## LOOMS.

	Active.	Idle.	Not complete.	Total.
Alabama .....	18,994	..	10	19,004
Arkansas .....	160	..	..	160
Georgia .....	43,085	504	60	43,649
Kentucky .....	1,350	..	..	1,350
Louisiana .....	1,014	1,302	..	2,316
Mississippi .....	3,127	1,625	..	4,752
Missouri .....	730	..	..	730
North Carolina .....	63,594	507	1,800	65,901
South Carolina .....	110,690	12	96	110,798
Tennessee .....	5,126	..	..	5,126
Texas .....	2,942	300	..	3,242
Oklahoma .....	..	..	..	..
Virginia .....	12,744	..	..	12,744
Total .....	263,566	4,250	1,966	269,772
Last year .....	256,756	4,894	8,373	270,023
Year before .....	249,479	5,224	6,159	260,862

## SPINDLES.

	Total.	In operation.	Idle.	New, not completed.
		Old.	New.	
Alabama .....	1,063,331	1,079,459	..	14,472
Arkansas .....	13,000	6,000	..	7,000
Georgia .....	2,168,800	2,119,588	33,088	16,124
Kentucky .....	94,628	94,628	..	..
Louisiana .....	79,435	38,683	40,752	..
Mississippi .....	181,396	127,500	53,896	..
Missouri .....	31,896	31,896	..	..
North Carolina .....	3,924,622	3,761,118	10,040	31,212
South Carolina .....	4,688,454	4,682,086	1,152	5,216
Tennessee .....	314,064	286,264	5,704	22,096
Texas .....	126,028	114,028	12,000	..
Oklahoma .....	5,712	5,712	..	..
Virginia .....	477,469	477,469	..	..
Total .....	13,199,426	12,824,422	10,040	184,804
Last year .....	12,819,333	12,288,651	1,690	226,422
Year before .....	12,318,356	11,709,354	34,200	258,320

\*Includes spindles being added to old mills, as well as those in new concerns.

†Including spindles added to old mills, less spindles

thrown out during year, and new not complete mills of last year which started operations this season.

\*Exclusive of 69,468 spindles using foreign cotton, say 2064 in Alabama, 10,886 in Georgia, 47,382 in North Carolina, 9136 in South Carolina.

## Southern Consumption of American Cotton, Year Ending August 31.

(Actual figures reported by the mills.)

States.	*No. mills.	†Looms.	‡Spindles.	1914.	1913.
Ala. ....	68	18,994	1,079,459	290,368	301,561
Ark. ....	1	160	6,000	6,592	10,373
Ga. ....	150	43,085	2,119,588	658,725	655,281
Ky. ....	6	1,350	94,628	27,742	27,016
La. ....	4	1,014	38,683	19,209	15,748
Mo. ....	2	3,127	127,500	33,000	32,717
N. C. ....	334	63,594	3,771,158	909,723	876,202
S. C. ....	158	110,690	4,682,086	815,789	781,786
Tenn. ....	19	5,126	286,264	89,496	82,518
Texas ....	13	2,942	114,028	61,233	61,348
Okla. ....	1	..	5,712	10,317	8,367
Va. ....	12	12,744	477,469	91,792	91,532

Totals .. 1813 283,556 12,834,462 3,037,308 2,969,559

Less consumed and taken from Southern seaports and included in port receipts .....

Net consumption to be added to crop .....

\*Mills in operation only. For total in South see other table.

†Employed in mills in operation. For total looms and spindles in South see other table.

‡Exclusive of one mill in operation using only foreign cotton in North Carolina.

§Spindles working American cotton only; for statement foreign see elsewhere.

## Consumption by Southern Mills in Pounds.

The following shows the consumption of American cotton by Southern mills during the past two years in pounds of lint cotton and the average net weights per bale:

	Pounds (Lint).	Average Weights.*
	This year.	Last year.
Alabama .....	140,634,564	145,543,776
Arkansas .....	3,322,800	8,150,250
Kentucky .....	311,751,378	309,274,299
Louisiana .....	13,564,884	13,215,227
Mississippi .....	9,190,036	7,451,400
Missouri .....	15,706,702	16,005,154
N. Carolina .....	11,482,618	11,769,050
N. Carolina .....	423,351,405	409,568,258
S. Carolina .....	381,566,113	367,300,450
Tennessee .....	42,885,485	39,866,639
Texas .....	30,629,984	30,857,976
Oklahoma .....	5,181,245	4,298,345
Virginia .....	43,832,884	43,657,898
Total .....	1,433,100,098	1,403,858,781

\*Exclusive of bagging and ties.

†Not including foreign cotton.

## United States Spinners' Takings of American Cotton.

	1913-1914.	1912-1913.
Total crop United States..	14,588,591	14,167,115
Stocks at ports beginning of year.....	234,688	282,959
Total supply.....	14,823,279	14,450,074
Exported during year — (American) .....	8,883,993	8,610,719
Sent to Canada.....	148,564	147,152
Total.....	9,032,557	8,757,871
Less American cotton returned from foreign ports:		
To New York.....	1,774	303
New Orleans.....	1,275	116
Boston .....	314	60
Various .....	3,363	469

Burnt at ports..... 9,029,194 8,757,402

Stock at close of year... 231,398 234,688

Total takings for consumption, United States. 5,550,930 5,457,976

Of which—

Taken by spinners in Southern States—total... 3,037,308 2,969,599

Taken by Northern spinners .....

2,513,622 2,488,377

In accordance with action of convention of cotton exchanges held at Augusta, Ga., in May, 1914, the cotton year hereafter will date from August 1 instead of September 1, as formerly.

## The Cotton Movement.

In his report for September 11, Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 42 days of the present season was 225,349 bales, a decrease under the same period last year of 609,460 bales. The exports were 29,745 bales, a decrease of 346,240 bales. The takings were, by Northern spinners, 70,072 bales, a decrease of 42,146 bales; by Southern spinners, 88,798 bales, a decrease of 141,230 bales.

During the past seven years \$3,550,000 have been expended for street improvements in Little Rock, Ark., and \$8,880,000 upon fireproof buildings in the downtown district of the city.

## HOW A BIG INDUSTRY WAS WON.

Many Improvements Under Way at Chattanooga.

Chamber of Commerce,  
Chattanooga, Tenn., September 10.

## Editor Manufacturers Record:

To avoid possibility of losing an industry, itself large, but more important as a begetter of other industries, the Chattanooga Chamber of Commerce broke its rule in the instance of the Chattanooga Gas & Coal Products Co. by furnishing that concern a 15-acre site in a suburb. The company is a foreign one, although its name includes the word Chattanooga, being financed by New York bankers. It will, according to terms of a contract entered into with the Chamber, begin construction of the ovens on or before September 30 and complete them by June 1, 1915.

Officers of the Chamber, in deciding to supply the site, were actuated by several motives. It is firmly believed by them that the ovens, producing millions of feet of gas daily and other by-products in large quantities, will be fruitful in attracting new industries. Construction of the plant this fall and winter will give employment to many people at a time when there might be a scarcity of employment, and will put new money into circulation when every community in this country needs the impetus of that character.

In recent years the people of Chattanooga have given hundreds of thousands by popular subscription to a variety of projects, \$50,000 each in 1913 for the United Confederate Veterans' reunion and Grand Army encampment capping the climax. These circumstances, coupled with the war scare and temporary financial depression, made it difficult for the Chamber to raise money for the site, but it was accomplished, and by reason of the difficulties surrounding the campaign is considered all the more remarkable.

People, in and out of Chattanooga, who have been watching the course of events there for years with an abiding faith in the ultimate future of the community, are beginning to see more tangibly the fruition of their hopes. Even at such a time as this, when conservatism is almost dictated by the European situation.

Chattanooga is humming with improvements in progress or contemplated.

A new half-million dollar bridge is being constructed over the Tennessee River.

Viaduct over tracks traversing an important traffic artery is rising day by day.

The city-county hospital will be improved to extent of \$100,000 soon.

Southern Railway construction work near the city is felt there.

Queen & Crescent Railroad is building car shops in its yards.

Many smaller building operations are on foot.

With decided improvement of the Tennessee River in recent years by the Government, Chattanooga is determined to profit thereby, as is her right, being one of the most important points on the navigable portion of that stream. The Chattanooga Manufacturers' Association has laid before the Interstate Commerce Commission its claims for equalization of freight rates on material which is hauled on the river to distant points and delivered to railroads. Victory is predicted, and this would have an important bearing on the city's future expansion industrially and commercially.

From even this hasty survey it will be seen that the coke ovens, supplying another kind of cheap power for manufacturing, as well as by-products, that will bring new industries, fits into a long chain of conditions and resources that indelibly connect Chattanooga with increased success and growth. A few links in this chain are unlimited coal and iron, splendid transportation by rail and water, abundant cheap hydro-electric power, cheap fuel gas from the by-product plant and accessibility to a wide variety of timber for woodworking plants.

HAL F. WILTS.

Municipal authorities and business men of Mobile will ask the next Legislature of Alabama to cede to the city "made" lands in Mobile Bay thrown up in the improvement of a 27-foot channel as a preliminary to building a municipal dock system.



# Modern Coal Handling at Charleston

ADVANTAGES IN THE PLANT UNDER CONSTRUCTION FOR THE SOUTHERN RAILWAY.

The new coal-handling plant being built for the Southern Railway terminal at Charleston, S. C., will incorporate a novel feature in the arrangement for putting coal aboard ship after taking it from the railroad cars by the car dumper.

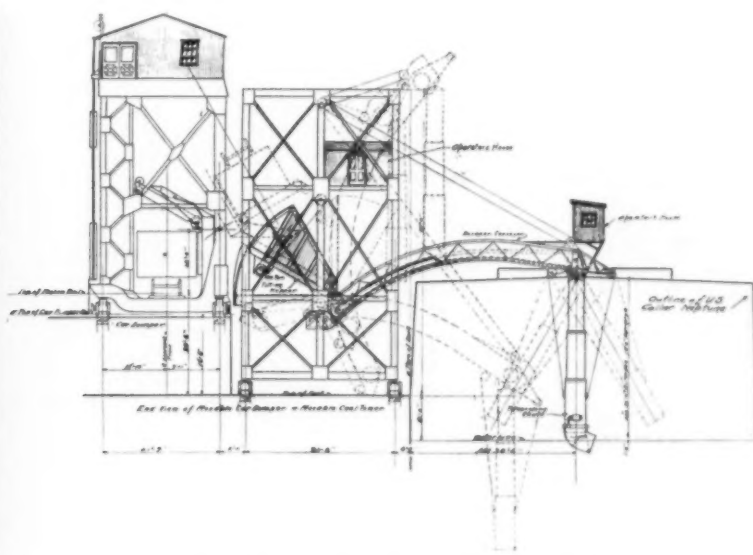
The dumper itself will be the well-known type used at the recently constructed coal piers at Norfolk, excepting that it will be mounted on wheels and will be moved by power along the dock with the coal-loading tower. This tower provides a means of loading coal directly from the car dumper to the ship without the necessity of elevating the coal to the top of a stationary coal pier, as has generally been the custom. In other words, machinery is introduced to take the place of gravity loading. It is expected that its results will be fully equivalent in speed of loading per unit, and that the coal will be handled much more directly and the breakage thereby reduced to a minimum. The handling

of handling 30 cars per hour, and is designed to discharge coal from any type or size of open-top cars in present use. The loading tower is capable of maintaining the capacity of the car dumper.

The movable car dumper will be of the Hulett type, which consists of a steel framework carrying operating machinery in a house at the top of the machine. Ropes from winding drums, which are provided with the necessary gearing to connect them to the motors, are connected to the rotating cradle upon which the car is placed for dumping. These motors are under control of the operator, whose cab is located at the incoming end of the car dumper, where he may have a clear view of the work. The rotating cradle is provided with clamps for securing the car in position on the cradle during the motion of rotation. These clamps are automatically adjustable to different sizes of cars and are operated by counterweights which travel in guides at

of coal, and is arranged at the forward end, so that it is possible to raise or lower the rear end to receive the coal. When the coal is received in this hopper, the flow from the hopper to the conveyor is regulated by raising or lowering the back of the hopper, thus allowing the coal to be discharged onto the conveyor as desired.

The conveyor is carried on a hinged boom supported in the forward portion of the tower framework. This boom is arranged so that it may be raised or lowered by means of ropes attached to the outer end and to the top of the tower. When discharging into boats the outer end of the boom is lowered to the proper position, so that the telescopic chute extends through the hatch opening. In the extended position this boom is of sufficient length so that the telescopic chute is approximately 36 feet 6 inches forward of the front runway of the tower. The rear end of the boom is so designed, however, that the boom may be retracted in order to provide a shorter reach when discharging coal into boats of small beam. This makes a very flexible arrangement, as it is possible to extend and elevate the boom to discharge coal into boats of large beam with high hatches, or it may be lowered and retracted to discharge into boats of small beam with low hatches, the result in



SIDE ELEVATION AND VIEW OF CAR-DUMPER PLANT IN COURSE OF ERECTION AT CHARLESTON, S. C., FOR THE SOUTHERN RAILWAY.

of fragile coals in carload lots without breakage is a very desirable feature, and one of the points carefully considered by the Southern Railway people.

## Coal-Handling Plant.

This plant will consist essentially of a movable loading tower and a movable car dumper, mounted on tracks located on the coal pier. The tracks for the loading tower will be located on the top of the pier. The car dumper will be carried on a steel trestle and will be designed to travel lengthwise of the dock a distance of approximately 300 feet. This trestle upon which the car dumper travels will be of sufficient height to elevate the rails of the car dumper approximately 17 feet 8 inches above the top of the dock. The loading towers will be designed to travel along the dock a distance of 100 feet opposite to the car dumper trestle. The yard tracks for the road cars will be carried on trestles which will form a continuation of the car dumper trestle, and in operation the loaded cars will be brought from the storage yard to the car dumper by means of a yard locomotive. The locomotive will spot the loaded cars on the cradle of the car dumper, which has first been placed in a position opposite the loading tower. The car dumper will rotate the car, discharging the contents into a receiving hopper on the loading tower, and this receiving hopper will, in turn, discharge the coal onto a steel flight conveyor carried on a boom attached to the tower. This conveyor will transfer coal to its outer end, which terminates into a telescopic chute, extending through the hatch opening into the cargo hold. The chute terminates at its lower end in a rotating trimmer, which can be revolved to any position for discharging coal, as desired. The telescopic chute is also capable of being swung athwart ships in order to discharge the coal to the sides of the hold. The car dumper is capable

of the rear side of the framework. Their action is entirely automatic in every respect, and they require no attention from the operator.

Each end of the car dumper framework is provided with an incline approach up which the cars are pushed by the yard locomotive when being placed on the car dumper cradle. The discharge end of the car dumper is provided with a similar incline, down which the cars run after being dumped and pushed out of the cradle. The points of these approaches are provided with flanges, which keep them in accurate alignment with the tracks for the road cars. After a car has been dumped it is displaced by the incoming loaded car and runs down the discharge track to a switchback and thence to the empty storage yard. The car dumper is mounted on six four-wheel equalized trucks, designed to travel on four runway rails arranged in pairs 24 inches center to center, the front and back runway being spaced 21 feet 9 inches centers. Four of these trucks are provided with gears, which are connected to the travel motor located in the house at the top of the framework. This machine is electrically operated throughout and is provided with all modern safety devices. The cradle is rotated by means of two motors of 200 horse-power each, and the machine is traveled by means of one 100-horse-power motor. All controllers are of the magnetic switch type, and those for the cradle motors are provided with dynamic braking attachment for controlling the lowering of the cradle after dumping cars.

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each case being that the coal is not elevated beyond the requisite point to discharge through the hatch opening, and consequently excessive drop is avoided. When out of service the boom is drawn up and the telescopic chute folded in such a way as to provide clearance for the rigging of ships lying alongside the pier, also to provide clearance, if necessary, when moving the machine from one hatch to another.

This machine is electrically operated throughout, and the motions are controlled by two operators, one located at the outer end of the boom, who controls the scraper, telescopic chute and trimmer, and another operator located on the tower, who controls the hoisting or lowering of the boom, the tilting of the receiving hopper and the moving of the machine along the pier.

The boom hoist and hopper hoist are operated by one 100-horse-power motor, the gearing being provided with clutches to engage either function. The boom-retracting and tower-moving motion are controlled by one 65-horse-power motor. These motors are located in a machinery-house on the tower framework. The conveyor is operated by an independent motor which is mounted on the boom and connected to the sprockets at the outer end of the boom. The conveyor consists of two heavy roller link chains, carrying steel flights which are approximately 2x8 feet long. These flights are spaced three feet apart on the chains and are arranged to slide the coal through a steel trough on the boom at a speed of approximately 150 feet per minute.

The telescopic chute at the end of the boom is raised and lowered or swung athwart ships by means of ropes operated by a 25-horse-power motor located at the end of the boom. This telescopic chute is made so that it can be extended full length when discharging the first coal into the hold, and as the height of the coal increases the chute may be drawn up and telescoped so as to mini-

mize the drop of coal as it is discharged into the cargo hold.

The loading tower is mounted upon trucks of a type similar to those used under the moving car dumper. Four of these trucks will be provided with moving gears for traveling the machine along the pier. When trimming cargo the coal car will be dumped into the tilting hopper and the coal discharged to the conveyor under control at such speed as it is required for trimming. The builder of the plant is the Wellman-Seaver-Morgan Company of Cleveland, O.

### Coals for Export.

With a view to aiding the coal operators of the United States to expand their markets at a time when the exporters of other coal-producing nations are inactive, the Bureau of Mines has issued a bulletin describing the various coals of the country which are best available for foreign shipment. The bulletin, which is printed in Spanish, Portuguese and English, will be given special distribution among the large coal-users and importers of South and Central America. That this important field is as yet slightly developed as a market for United States coals is shown by the statistics of coal exports. Of 16,083,101 tons of coal exported during 1913, but 450,000 tons went to South America. Canada was the best customer, taking 11,500,000 tons. The bulletin lists as available for this promising export trade seven groups of coal fields. These are the Pocahontas and New River coals of West Virginia, with Norfolk and Newport News as shipping ports; the Maryland and Eastern Pennsylvania coals, to go through Baltimore or Philadelphia; the Virginia, Kentucky and Tennessee coals, through Hampton Roads or Charleston; the Alabama coals, through Mobile or New Orleans; the Western Pennsylvania coals through New Orleans; the Illinois and Indiana coals, through New Orleans, and the Washington coals, through Seattle. The bulletin gives in detail the general characteristics of the various coals, and points out which are the best adapted to railroad use, manufacturing, gas-making or coke-making. Average analyses are given, and the heating values are expressed in British thermal units and in calories.

"Coals of excellent physical character and of high heating value are available for export," states the bulletin. "For this reason and because of the modern facilities at the collieries for properly grading large shipments, the American producers can export coals suitable for any kind of service. The transportation systems from the mines to tidewater and the coal-handling equipment for loading boats at the various ports are highly developed, so that producers are able to give excellent service to foreign buyers. Enormous quantities of these coals have been used by railroads, manufacturing plants and seagoing vessels, and for household purposes. Much of the coal available for export is superior to the coals that have been supplied to foreign users from other sources."

### Georgia's Mineral Output \$6,500,000.

Georgia ranked second among all the States in 1913 in the production of barytes, bauxite, fuller's earth, natural mineral paints and paper clay, and was the only State reporting a production of asbestos, according to figures of the United States Geological Survey, compiled in co-operation with the State Survey. The total value of the mineral products of Georgia in 1913 was a little over \$6,500,000, nearly 80 per cent. of which was derived from its clay pits and quarries. It ranks third among the Southern States and twelfth among all the States in the value of its clay products, which consist chiefly of common brick, front brick and sewer pipe. The manufactured clay products were valued at \$2,692,619 in 1913 and \$2,806,541 in 1912. The deposits of clay suitable for brick manufacture are found in nearly every county of the State. Paper clay is dug in five counties, and deposits of pottery clay have been developed in various parts of the State.

The quarry products, consisting principally of granite and marble, were valued at \$2,105,366 in 1913 and \$1,983,016 in 1912. Georgia granites have a high reputation for building purposes, and its marbles are greatly prized for their structural and decorative qualities.

Small portions of the Walden coal basin of Tennessee

and of the Lookout coal basin of Alabama are in the northwest corner of Georgia, and the coal production of the State increased from 227,503 short tons, valued at \$338,426, in 1912, to 255,626 tons, valued at \$361,319, in 1913. Portland cement showed a substantial increase over the output in 1912. Georgia is one of the chief sources of the supply of ocher, included in the production of mineral paints, the output of which in 1913 was 11,869 short tons, valued at \$123,616, against 10,112 tons in 1912, valued at \$101,819. Other commercial mineral products are iron ore, sand, gravel, asbestos, barytes, bauxite, fuller's earth, gems, gold, graphitic shale (used for a color maker in fertilizers), lime, mineral water, pyrite, sand-lime brick, silver, slate, talc and tripoli. The total value of the mineral products of Georgia in 1913 was \$6,525,792, against \$6,306,140 in 1912.

### For a Monument to John Teasdale.

J. I. McCants, manager of sales of the Standard Portland Cement Co., Birmingham, Ala., writes to the MANUFACTURERS RECORD:

"So much is being written now about the great value of the cotton crop and what it means to the whole world, that I think this an opportune time to pay honor to one John Teasdale, my great-great-grandfather, who exported the first bale of cotton from America. The shipment consisted of eight bales shipped from Charleston, S. C., to Manchester, England, in the year 1784, consigned to J. J. Teasdale & Co. (Extract from Charleston Year Book, 1883, page 107; also Johnson's Traditions of the American Revolution.)

"Today nearly two-thirds of our great cotton crop is exported, the value of which in raw and finished products mounts up to billions of dollars. Employment is given to hundreds of thousands, and the balance of the trade in favor of the United States is dependent upon our cotton exports. Thus John Teasdale opened up the commerce of the South, and a monument should be erected to his memory."

### Appalachian Mills.

Early in October the Appalachian Mills, Knoxville, Tenn., will begin operating the company's yarn-spinning mill, now about completed in accordance with previous announcements. About \$200,000 has been invested to construct another story on mill building and install 10,000 spindles, with accompanying machinery, for a weekly capacity of 70,000 pounds of Nos. 8, 9 and 10 knitting yarn. This yarn will be consumed in the Appalachian company's knitting mill.

### Bettie Francis Cotton Mills.

The Bettie Francis Cotton Mills, Alexander City, Ala., will construct a 100x80-foot main building and a 55x55-foot warehouse, install 8000 spindles and accompanying machinery, etc., for a weekly capacity of 20,000 pounds of cotton yarn. This company was reported organized last April, and its president is Benjamin Russell.

The Eagle and Phenix Mills, Columbus, Ga., will soon complete its change, in progress for some months, from direct water-power to the hydro-electric drive. About \$75,000 has been expended during the year, and motors of 3000 horse-power capacity will be used. Motors are being furnished by the Westinghouse Electric & Manufacturing Co., Pittsburgh; generators by the Allis-Chalmers Co., Milwaukee; wheel governors by the Holyoke (Mass.) Machine Co., and mechanical changes by the Golden Foundry & Machine Co., Columbus, Ga. P. N. Hill is the electrical engineer in charge.

French Broad Manufacturing Co., Asheville, N. C., now has an annual capacity of 1,500,000 pounds of cloth, the finished product being 550,000 white quilts. During the year the company has expended \$20,000 for improvements and additions, about \$6500 being the cost of a water-filtering plant. The new machinery installed included eight looms for manufacturing crocheted quilts, pattern punch and stitching machines, etc., all driven by electric power.

## Good Roads and Streets

### SOUTHERN HIGHWAY ACTIVITIES.

#### Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

#### Bonds Voted.

Columbus, Miss.—Lowndes county ordered \$50,000 bonds for road improvements in District No. 2.

Lufkin, Tex.—City voted \$40,000 bonds to improve streets.

Quitman, Ga.—City voted \$35,000 bonds to pave concrete sidewalks.

Sherman, Miss.—City will issue \$10,000 bonds to improve streets.

#### Bonds to Be Voted.

Gadsden, Ala.—Etowah county votes November 3 on \$200,000 bonds to construct roads.

Maysville, Ky.—Mason county votes November 3 on \$200,000 bonds to reconstruct and maintain roads.

Maryville, Mo.—Lincoln township of Nodaway county votes September 29 on \$25,000 bonds to construct roads.

Meridian, Miss.—Lauderdale county votes November 3 on \$50,000 bonds to construct roads.

Starkville, Miss.—Oktibbeha county votes September 25 on \$130,000 bonds to construct roads in Bent 1.

#### Contracts Awarded.

Corinth, Miss.—Alcorn county awarded contract to grade and macadamize 10 miles of road; amount available, \$50,000.

Fort Bliss, Tex.—City awarded \$10,200 contract to construct concrete roads, drives and cement walks.

Fort Myers, Fla.—City awarded contract to construct 2500 yards concrete street paving.

Lafayette, Ala.—State awarded \$10,570 contract to grade and drain Lafayette-Opelika road.

Star City, Ark.—Road Improvement District No. 2 of Lincoln county awarded contract to build 28 miles of macadam road; cost \$108,000.

#### Contracts to Be Awarded.

Austin, Tex.—Hays county opens bids about October 20 to surface with gravel 24.6 miles of highway.

Birmingham, Ala.—City will pave curbs and gutters on Walnut street; cost \$7000.

Birmingham, Ala.—City will expend \$15,000 for grading, macadamizing, curbing, gutters, etc.

Centerville, Ala.—Bibb county receives bids until September 24 to construct three miles of State-aid road and eight miles of county roads.

Charleston, W. Va.—City receives bids until September 24 to curb and pave 29 streets; about 40,400 feet curb and 68,300 square yards paving.

El Paso, Tex.—El Paso county will construct asphalt road to cost about \$100,000.

Hamilton, Ala.—Marion county receives bids until October 9 to grade and drain about 50 miles of road.

Highlandtown, P. O. at Baltimore, Md.—Baltimore county opens bids September 24 for street improvements; amount available, \$18,000 to \$20,000.

Gadsden, Ala.—City Council passed ordinance providing for curb and gutter to cost \$7000.

Jackson, Tenn.—City will construct 11,946 lineal feet of bitulithic pavement.

New Cumberland, W. Va.—City received bids until September 15 to construct 3 miles of brick paving estimated to cost \$30,000.

Richmond, Va.—City appropriated \$100,000 for road improvements.

### Good Roads and Railroads.

Regarding the public roads as an indispensable part of the transportation system of the country, supplementing its railroads and waterways, President Har-



son, of the Southern Railway Company, takes an active interest in the good-roads movement. He is vice-president of the American Highway Association, and will be one of the speakers at the Fourth American Road Congress in Atlanta the week of November 9.

Speaking of the relation of the country highway to the railroad, Mr. Harrison said:

"Whatever may be the final destination of the farm products, their first movement must be over the country road, and if the farmer is to receive the largest measure of benefit from good roads the policy should be adopted of improving those highways which radiate from market towns and shipping stations and over which the farmers must haul their products. The profit which will be earned by the farmer may depend largely upon the condition of the road from its farm to a shipping station. Statistics compiled by the United States Department of Agriculture show that the cost of hauling farm products to shipping points over bad roads is a disproportionately large part of the total expense of their transportation to market. This is not always fully realized by the farmer, but if he will take into account the time of himself and his team, and the wear and tear on his vehicle and harness made necessary by a large number of trips with smaller loads, he will find that the cost mounts up very fast and correspondingly reduces his net profits. Another item of the cost of bad roads to the farmer, which is often overlooked, is that he must haul his products to markets when the roads are not in their best condition, with little regard as to whether prices are favorable or whether hauling at that time interferes with work on the farm. With good roads he can not only haul heavier loads in shorter time, but, except as to perishable commodities, he can market his products when prices are most favorable and can do his hauling when it is most convenient, and even when the ground is too wet for work in the fields.

"The manifold advantages of an improved highway in reducing the cost of drayage, facilitating social intercourse, promoting school and church attendance, expediting rural mail delivery, increasing the value of farm lands, and promoting agricultural development back from the railroads are so great that they need but to be enumerated to present a convincing argument in favor of road improvement.

"Since several years ago, when the Southern Railway Company, in conjunction with the United States Agricultural Department and State and local authorities, operated over its lines a good-roads train, carrying machinery and lecturers, and building at central points object-lesson roads, there has been very substantial progress in the good-roads movement throughout the South. This was accelerated in 1911 by the operation of another good-roads train in co-operation with the United States Department of Agriculture and the American Highway Association. The interest of the Southern people in good roads has been thoroughly aroused, and in many localities the country highways have been highly improved and are being adequately maintained.

"I think it is fortunate for the South that the American Road Congress of 1914 is to be held in Atlanta. This will unquestionably be one of the most important gatherings ever held in the Southern States. It will bring together the official heads of the State Highway Departments, the foremost experts in road construction and maintenance, and other leaders in the good roads movement in each State for an exchange of ideas as to the best methods of financing road construction and building and maintaining the best types of country highways. Its exhibits of road machinery and of model roads will be highly educational, and it can not but serve to increase interest in the good-roads movement throughout the South."

Construction is to be resumed immediately upon the Paducah & Illinois Railroad and also upon the Burlington System's bridge over the Ohio River at a point about 12 miles from Paducah, Ky. Work was recently suspended pending financial arrangements, which are now said to have been satisfactorily concluded, for the immediate prosecution of the work.

Theodor Heyde, Tiflis, Caucasus, wants data (including description, operation, shipment, etc.) and prices on American steam and motor street rollers, especially 10-ton rollers.

## RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### NORFOLK & WESTERN REPORT.

#### Extension and Improvement Program Continued—Good Showing for the Year.

Continued expenditures for extensions and improvements are shown in the annual report of the Norfolk & Western Railway Co., which has just been issued. Considerable work is yet uncompleted, but some of it is to be finished by the end of this calendar year. Double-track construction is in progress between Zuni and Disputanta, Va., about 26½ miles; also west of Suffolk, Va., about 1½ miles. This work is all to be finished before January, which will give the road 637 miles of double track in operation between Norfolk, Va., and Columbus, O., this including as double track the low-grade lines around Lynchburg and Petersburg, and the Big Sandy line. There also remains about 67 miles of single track in several pieces, two of about 17 miles each, one of a little more than 31 miles and another of about 2 miles.

Construction of the extension into North Carolina, known as the Virginia-Carolina Railway, has proceeded satisfactorily, although the severe weather of last winter caused some heavy slides in the cuts. On the date of the report, which marks the close of the fiscal year of the company, grading had been completed on 21 miles and was nearing completion on 28 miles, while about 9 miles of track had been laid and surfaced. Bridge work was also well advanced, and a number of station buildings and other structures had been erected. This represents an expenditure on the extension of \$766,235, and when it is finished in the early part of next year it will have cost about \$1,250,000.

Another piece of construction, which is expected to be completed this month, is the extension of the New River, Holston & Western Railroad from Rocky Gap to Suiters, Va., about 14 miles. Satisfactory progress was made in spite of bad weather. Grading was practically finished July 1 and eight miles of track had been laid. The total cost of this extension will be about \$250,000.

Construction has just begun on the Tug River & Kentucky Railroad near Matewan, W. Va., contract having been let to W. W. Boxley & Co. of Roanoke, Va., for 1½ miles up the valley of Blackberry Creek in Pike county, Kentucky. This includes a bridge over Tug River, and its estimated cost, including the bridge, is \$200,000. This is expected to be finished by July of next year. The cost of the entire line, which will be 17 miles long up Blackberry Creek, Peters Creek and Poplar Creek to valuable coal deposits, will be about \$300,000.

The important work of installing means of electric operation on 30 miles between Bluefield and Vivian, W. Va., is proceeding nicely, and is to be finished by January.

Besides all this, there have been made a number of additions and betterments to the permanent way and structures, and among these is noted the completion of the coal pier at Lambert's Point, near Norfolk. This pier, which is of steel construction, rests on concrete foundations. It is 1200 feet long, 71 feet wide and 90 feet high above the water. It will handle 600 cars of coal per day of 10 hours. It is operated with electric machinery.

Improvements to the line include the relaying of 73 miles of main track with 100-pound rails and the installation of many automatic signals. There are now 485 miles of double track and 100 miles of single track protected by them.

New equipment received consisted of 6326 freight cars, 41 all-steel passenger cars, 26 locomotives and 4 locomotive cranes. Ten of the engines are passenger locomotives, and they were built at the Roanoke shops of the railroad company, as were 3212 of the freight cars.

The total additions to the cost of the road and its equipment amounted to \$15,333,648.

The income statement presented in the report shows comparisons with the preceding year, and is as follows: Total transportation revenue \$44,203,373, increase

\$707,962; total operating revenues (which includes revenues from operations other than transportation) \$44,470,618, increase \$730,698; total operating expenses \$29,935,841, increase \$1,370,028; net revenue, rail operations, \$14,534,777, decrease \$639,330; net railway operating revenue after deducting deficit for auxiliary operations \$14,514,902, decrease \$651,596; railway operating income after taxes \$12,894,902, decrease \$819,596; gross income \$14,802,293, decrease \$586,687; net income after deductions for rentals, interest on funded debt, etc., \$10,268,139, decrease \$838,501; income balance transferred to profit and loss after dividends on adjustment preferred stock \$9,348,471, decrease \$838,501. Out of this remainder were paid dividends on the common stock and appropriations were made for additions and betterments. The total balance to credit of profit and loss June 30, 1914, was \$12,565,090, an increase of \$1,141,984 as compared with the same date last year.

### \$8,500,000 FOR PIEDMONT LINES.

#### Note. Issue, Instead of Bonds, to Provide for Construction and Equipment.

The Piedmont & Northern Railway Co., says a report from New York, has arranged to provide financing now required for construction and equipment by an issue of \$8,500,000 of 5 per cent. 5-year gold notes secured by an issue of \$10,000,000 of its recently authorized \$50,000,000 bonds, the remainder of which are to be issued from time to time hereafter as may be required for construction, etc. It is said that a large majority of notes are outstanding, having been taken by those who subscribed to the road. J. B. Duke is president. The railroad lines, which are electric high-speed interurban, are between Charlotte and Gastonia, N. C., and Spartanburg, Greenville, Anderson and Greenwood, S. C.

Extensions both northward and southward are projected. One from Greenville to Spartanburg, 32 miles, was lately completed, and there is talk of building a connection between Spartanburg and Gastonia to link up the two divisions of the system. This would demand construction of about 50 miles of line through difficult country so that the work would be more costly per mile than that which has just been finished. The company is also looking to extend northward from Charlotte to Concord, N. C., about 25 miles, and it has in view the probable extension some day from Concord to Salisbury, Greensboro and Durham, N. C., about 150 miles. It is anticipated that the extension to Concord will be the first new work undertaken, although the company has not made any announcement of its plans.

The first meeting of the directors since the consolidation of the North and South Carolina lines was held recently at Chick Springs, near Greenville, and in addition to the election of Mr. Duke as president, the following officers were chosen: W. S. Lee, first vice-president; E. Thomason, second vice-president and general manager; N. A. Cocke, secretary; T. L. Black, treasurer; executive committee, W. S. Lee, L. W. Parker, E. Thomason, Z. V. Taylor, E. A. Smyth.

### New Agency Established.

G. C. Whitney has been appointed under date of September 1 commercial agent of the Queen & Crescent Route at Greensboro, N. C. He has been heretofore traveling freight agent for the company, with headquarters at Dallas, Tex., and his successor in that position is G. F. Kay, formerly soliciting freight agent at Houston. The agency at Greensboro is a new departure. That territory has hitherto been handled through the Charlotte office of the line, but as the region was large it was decided to make a division of it.

### San Antonio to Medina Lake.

The San Antonio, San Jose & Medina Valley Interurban Railway Co. has five miles of its proposed line now in operation from San Antonio to San Jose, Tex. The remainder of the route is via Kirk, La Coste and Castroville to Medina Lake, a total distance of 42 miles from San Antonio. There will be two steel bridges, one of 100 feet over the Medina River near Kirk and the

other over Leon Creek. The railroad will traverse about 30,000 acres of irrigated lands which receive water from the lake. It is not yet announced when bids will be received for construction and equipment. The route is mostly level, but about six miles of it nearest the lake is through rough country. Connections with other lines are to be made as follows: International & Great Northern Railroad at Kirk; San Antonio, Uvalde & Gulf Railway at San Jose; Southern Pacific Railway at La Coste. A. D. Powers is president; E. O. Burton and H. L. Miles, vice-presidents; J. G. Miller, general manager and chief engineer, the other member of the board of directors being A. J. Bell. C. A. Newton is secretary. Mr. Miller's address is 400 Swearingin Building, San Antonio, Tex.

#### Another Nashville-Corinth Line.

There will not be any election held in Davidson county, Tenn., of which Nashville is the county seat, upon the proposition to vote \$1,000,000 of bonds in aid of the projected Nashville, Shiloh & Corinth Railroad. At the recent meeting of the county court, which was to take action upon a petition for the election, sentiment developed so strongly against the subscription that Clopton C. Thomas, of Corinth, Miss., secretary of the railroad company, withdrew the petition. Several other counties had voted a total of \$750,000 of bonds, which would have been available had Davidson county also been favorably inclined toward the enterprise. Steps are being taken to secure another railroad from Nashville to Corinth. The Nashville Commercial Club has appointed a committee of 30 members, with Emmet Cooper as chairman, to raise a fund of \$10,000 or \$12,000 to make a survey. It is expected that a route will be discovered that will prove more economical for construction than that at first suggested.

#### Improvements at Chattanooga.

In connection with the construction of new double-track line to be used by the Alabama Great Southern Railroad between the Chattanooga terminal station and Wauhatchie, Tenn., an expenditure of \$80,000 has been authorized on the Belt Railway of Chattanooga between East End avenue and the "Y," where connection is made with the extension line now being completed through the Lookout Mountain tunnel. The work to be done includes the building of second main line track between the points mentioned; the extension of the present interlocking plant at East End avenue so as to cover the additional tracks proposed; the construction of an interlocking plant at the crossing of the Central of Georgia Railway and the Chattanooga Belt Line near Missionary avenue; another interlocking plant near the south end of the yards, where the trains will leave the Chattanooga Belt and enter the Lookout Mountain tunnel line, and the installation of electric automatic signals on the double track of the Chattanooga Belt between the points mentioned.

#### New Equipment, Etc.

Southern Railway is receiving 7 all-steel dining-cars from the Barney & Smith Car Co., Dayton, O.

Louisville & Jefferson Bridge Co. has ordered a switching locomotive from the American Locomotive Co., New York.

Pennsylvania Railroad has ordered 650 tons of bridge steel from the Fort Pitt Bridge Works; also 840 tons from the McClintic-Marshall Construction Co., both of Pittsburgh.

New Orleans, Texas & Mexico and the St. Louis, Brownsville & Mexico railroads, known as Gulf Coast Line, are receiving deliveries on 20 locomotives and 800 box cars ordered several months ago.

#### North Georgia Mineral Railway.

A petition has been filed in Atlanta for the incorporation of the North Georgia Mineral Railway Co. for the construction of a line about 50 miles long from Atlanta through Fulton, Cobb, Cherokee and Bartow counties to Warford Crossing. The capital stock is \$1,250,000, which may be increased to \$2,500,000. Headquarters

will be in Atlanta. The incorporators are Jack J. Spalding, George S. Lowndes, John Morris, Daniel Macdougald, A. E. Thornton, Alex. C. King, H. S. Collingsworth, Hughes Spalding, W. J. Morrison and James S. Floyd, all of Atlanta.

#### An Electric Railroad Power Plant.

Construction is far advanced upon the Norfolk & Western Railway's power plant at Bluestone, W. Va., which will furnish current for the electric operation of 30 miles of railroad between Bluefield and Vivian, and it is expected that the entire section will be ready for use by January. Work on the building proper is about 95 per cent. completed, and considerable of the mechanical and electrical equipment has been received and partly erected. Gibbs & Hill, Pennsylvania Station, New York, are the engineers in charge.

## MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

#### Bag-on-the-Handle Vacuum Cleaner.

A new portable vacuum cleaner of the outside bag type, which has recently been developed by the Western Electric Co., 463 West street, New York city, embodies



MAY BE HUNG IN CLOSET.

what are said to be new and distinctive features that will make it popular.

The new type of frame construction for the bag permits the use of a horizontal handle, a natural and con-



NO. 11 VACUUM CLEANER.

venient grip for pushing a cleaner, and enables the cleaner to be hung on a clothes hook in the closet when not in use. The controlling switch is mounted on the handle directly under the normal position of the right

hand, a most convenient position for instant control.

Other improvements are an ingenious arrangement incorporated in the cleaning tool for picking up loose threads, and for cleaning under furniture, as shown in one of the accompanying illustrations.

Special literature and a complete set of new sales



CLEANING UNDER FURNITURE.

helps will be offered to central stations and dealers throughout the country to assist them in marketing this new cleaner.

#### How to Secure Business.

John G. Hullett, secretary Baltimore Office Supply Co., Baltimore, Md., writes to the MANUFACTURERS RECORD:

"After having used the MANUFACTURERS RECORD for over nine years, we can truthfully say we have found it of immense benefit to us in securing business. In fact, the Daily Bulletin is almost indispensable to us, as the information it gives enables us to get in direct touch with all the new corporations formed throughout the South almost immediately upon receipt of their charter, and consequently receive a large part of their business for corporation supplies. It has been the means of our securing many permanent customers as far away as Texas, Oklahoma and Louisiana. We used to get the names of the new corporations direct from the capitals of the States where incorporated, paying five cents per name for them. After receiving the Daily Bulletin we found we received most of the names in the Daily Bulletin the same day we received them by mail direct. If you will note the average number of new corporations reported in a week, you will readily see that our subscription for the year now amounts to about what we previously paid for the names in one week. We have no doubt that any concern who uses the information given in the MANUFACTURERS RECORD and Daily Bulletin intelligently can secure business much cheaper than could be gotten in any other way, especially if they will use stationery in keeping with the impression they wish to convey when sending out sales letters."

#### To Build \$250,000 Lumber Plant.

The Delta Land & Timber Co. (Central Coal & Coke Co., Kansas City) will rebuild its plant reported burned at Carson, La. About \$250,000 will be expended, and the daily capacity will be 150,000 feet of lumber. Concrete and brick construction has been adopted, the plant to include dry kilns and two band-saws with one gang-saw.

Shamrock Damask Mills, Landrum, S. C., is now in full operation, with 20 looms on the production of damask. This \$20,000 company has a 100x66-foot building of brick mill construction, costing \$3500, and an equipment of machinery costing \$12,000. Its organization and plans were heretofore detailed.

Chamber of Commerce, Fort Worth, Texas, is formulating a plan for the organization of a company to build a cotton mill.

Commercial Club, Mexia, Texas, plans the organization of a company to build a cotton mill.



# Construction Department

## IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

### HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

### WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

### DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

### BRIDGES, CULVERTS, VIADUCTS

Ala., Gadsden.—Alabama Great Southern R. R., C. Dougherty, Ch. Engr., Cincinnati, O., is reported planning to construct viaduct across 29th St. from 19th to about 24th St.

Ark., Malvern.—Hugh R. Carter, State Highway Engr., Little Rock, prepared plans for steel bridge across Ouachita River in Bot Springs county.

Ark., Warren.—Bradley county will construct bridge; 385 ft. long, 16-ft. roadway; cost \$15,000; T. E. Bratton, Commr.; bids opened Oct. 6; city and Bradley county lately noted as appropriating \$4000 each to construct bridge. (See Machinery Wanted.)

Fla., Gainesville.—Alachua County Commrs. let contract Converse Bridge & Steel Co., Chattahoochee, Tenn., at \$7020 to construct Dugan's Bridge across Santa Fe River and bridge over canal between Santa Fe and Lake Alto.

Fla., West Palm Beach.—Palm Beach county votes Oct. 13 on creation of special district; proposes to build bridges costing \$6100. Address County Commrs. (See Road and Street Work.)

Ga., Albany.—Dougherty county defeated \$3000 bonds to construct bridges. (Lately noted.)

Ga., Ila.—Madison County Commrs., Danville, Ga., invite bids until Sept. 21 to construct steel bridge near Ila, consisting of 2 spans at 31 ft. and 1 span 60 ft.; Engrs., Good Roads Dept., University of Georgia, Athens (Searcy B. Slack, Engr.); J. W. Draper, Supt. Roads.

Ky., Louisville.—Jefferson county bridge over Floyds Fork includes 3 spans, each 60 ft. clear; through concrete girders; 20-ft. bottom of floor to foundation; earth approaches to cost \$1500; J. R. Gaines, County Engr.; contract (lately noted) let at \$12,972.50 to Pierce Butler, Starks Bldg., Louisville, Ky.

Md., Baltimore.—State Roads Com., 601 Garrett Bldg., will make fill at Baltimore City end of Hanover St. bridge under Arcade, about 10,000 cu. yds.; bids until Sept. 16; R. E. Weller, Chrmn. State Roads Com. (See Machinery Wanted.)

Miss., Newton.—Newton County Commrs., C. M. Wells, Clerk of Board, will let contract Oct. 5 to build 18 bridges in Dist. No.

4 over streams on Newton-Lawrence and Roberts Rd., Tanglewood extension, Lake Hazel, and Newton and Garlandville Rd.; total length of bridges, 1600 ft.; to be constructed of A. I. creosoted timbers, in accordance with specifications in Clerk's office. (See Machinery Wanted.)

Miss., Winona.—Montgomery county will construct several bridges; bids opened; John Harvey, Chancery Clerk.

N. C., Biltmore.—Buncombe county will construct reinforced concrete bridge across Swannanoa River at Biltmore; estimated to contain 1200 cu. yds. concrete; cost \$12,000; bids until Sept. 12; Chas. E. Waddell, Engr., 73 Patton Ave., Asheville, N. C. (See Machinery Wanted.)

N. C., Shelby.—Cleveland County Commrs., O. E. Ford, Chrmn., ordered \$25,000 bond issue additional to \$75,000 now issued; let contracts to construct 6 steel bridges in Townships Nos. 5, 6 and 7.

Okl., Enid.—Garfield county will construct 40-ft. steel bridge in Enid township, 52-ft. steel bridge in Kremlin township, 102-ft. steel bridge in Flynn township and 90-ft. steel bridge in Sumner township; also 20-ft. cement arch in Patterson township; County Commrs. invite bids until Sept. 21.

Tenn., Jellico.—Jellico Coal & Railroad Co., D. C. Barker, Ch. Engr., will construct 3 small bridges, 1 tunnel 300 ft. long and another ½ mi. long.

Tenn., Memphis.—City will construct reinforced concrete arched culvert across Bayou Gayoso at N. 3d St.; bids received until Sept. 15, include removal of old bridge, 950 yds. excavation and 465 yds. concrete culvert.

Tex., Anderson.—Grimes county will construct bridges and improve roads, expending \$30,000; bonds issued. Address County Commrs.

Tex., Fort Worth.—Tarrant County Commissioners have plans and specifications for bridge near Ten-Mile bridge; length 300 ft.; estimated cost \$5524.

Tex., Houston.—Harris county will construct two 6-ft., two 8-ft. and two 10-ft. concrete culverts; bids until Sept. 23; H. L. Washburn, County Auditor. (See Machinery Wanted.)

Tex., Marble Falls.—City defeated bonds for bridge construction; R. E. Johnson, Mayor. (Lately noted.)

Tex., Oakville.—Live Oak county will construct 9 creosoted pile trestles and 1 steel span; cost about \$10,000; plans on file with Bartlett & Ranney, Engrs., San Antonio; F. H. Church, County Judge.

Tex., San Antonio.—San Antonio, San Jose & Medina Valley Interurban R. R. Co., J. G. Miller, Ch. Engr., 400 Swearingin Bldg., San Antonio, will construct 100-ft. steel bridge over Medina River and 60-ft. steel bridge across Leon Creek.

Va., Lawrenceville.—Brunswick County Commrs. will construct 3 bridges as follows: one over Sturgeon Creek, 54 ft. 3 in. long, and one each over Sandy and Rose Creeks, each 36 ft. 3 in. long; superstructures include (for first bridge) 3 steel spans 18 ft. long; latter 2 steel spans 18 ft. each; have 12-ft. roadway; bids until Sept. 23; for further information address G. P. Coleman, State Highway Commr., Richmond, Va. (See Machinery Wanted.)

Va., Wytheville.—Wythe county will construct bridge on Cove Rd. Address County Commrs.

W. Va., Parkersburg.—Wood County Commissioners let contract Meredith Construction Co. of Marietta, O., at \$24,000 to construct bridge over Neal Run at Lauckport; length 672 ft.; concrete piers and foundations; steel superstructure.

### CANNING AND PACKING PLANTS

Ark., Little Rock.—Factoria Canning Co., capital stock \$25,000, inceptd.; S. H. Newland, Pres.; Henry W. Horn, Secy.-Treas.

Fla., Jacksonville.—Jones Packing Co., capital stock \$15,000, inceptd.; H. C. Schrader, Pres.; A. B. McNeice, V.-P.; F. E. Godfrey, Secy.-Treas.; Jas. H. Jones, Mgr.

Fla., Maitland.—Walter Drennen Co., Orlando, Fla., let contract to J. M. Knight, Leesburg, Fla., to erect addition to packing-house; 30x100 ft.; ordinary construction; daily capacity, 10 cars citrus fruits; also placed order for machinery. (Lately noted.)

Ky., Louisville.—C. von Allmen Preserving Co. organized; Eugene S. Howard, Pres.; C. von Allmen, V.-P.; R. H. Tydings, Secy.; J. A. Dickson, Treas.; will operate canning plant; daily capacity 100 cases jellies and preserves. (Lately noted inceptd., capital \$20,000.)

Tex., Mt. Pleasant.—H. W. Peterman contemplates erecting canning factory, etc. (See Miscellaneous Factories and Machinery Wanted.)

### CLAYWORKING PLANTS

Mo., New Florence.—Fire-bricks.—Chicago Fire-Brick Co., 509 Chamber of Commerce, Chicago, will build by day labor; main building 240x100 ft., costing about \$35,000; has begun construction. (Noted last January as to build plant with daily capacity 30,000 fire-bricks.)

### COAL MINES AND COKE OVENS

Ark., Jenny Lind.—Moma Coal Co., capital stock \$3000, inceptd. by Joe Moma, J. L. Henson, Max Richardson and others.

Tenn., Chattanooga.—Castlebrook Coal & Iron Co., capital stock \$35,000, inceptd. by F. W. Dillon, S. C. Tarver, C. A. Hall and others.

Va., Red Ash.—Raven Collieries Co., capital \$50,000, inceptd.; C. M. Rudder, Jr., Pres.; J. S. Kahle, Secy., both of Bluefield, W. Va.

W. Va., Crown.—Lowash Coal Co., capital \$30,000, inceptd. by G. I. Putnam, E. L. Carmichael, H. B. Summers and others.

W. Va., Ottawa.—Big Eagle Mining Co., capital \$25,000, inceptd. by J. M. Moore, Jas. Clark, A. M. Rogers and others.

### CONCRETE AND CEMENT PLANTS

Tex., Houston.—Concrete Products.—Concrete Products Co., capital stock \$5000, incorporated by L. L. Reber, F. B. Weeks and J. M. Blair.

W. Va., Wheeling.—Cement Blocks, etc.—W. L. Rogerson Co., capital stock \$5000, organized by H. W. Rogers (Pres.) and W. L. Rogerson of McMechen, F. C. Schroder and John Emig of Wheeling and others.

### COTTON COMPRESSES AND GINS

Ga., Barnett.—Barnett Gin Co. organized; J. H. Barnett, Pres.; P. C. Fielding, Secy.-

Treas.; will operate cotton gin; has building and machinery. (Lately noted inceptd., \$4000 capital.)

S. C., Jonesville.—Farmers' Union Gin Co., capital stock \$10,000, inceptd.; J. W. Scott, Pres.; Monroe Whitlock, V.-P.; M. P. Sams, Secy.; Geo. H. Fairbanks, Treas.

Tenn., Athens.—Athens Gin Co., capital stock \$3000, inceptd.; Jas. H. Moore, Pres.; U. G. Thompson, V.-P.; H. S. Moody, Secy.-Treas.; erect buildings in Ivins addition; purchased machinery; electric power.

Tex., Lockhart.—H. L. House will build cotton gin.

### COTTONSEED-OIL MILLS

Ala., Marbury.—Marbury Oil & Fertilizer Co. (lately noted inceptd., capital stock \$6500) organized; D. H. Marbury, Pres.; S. W. Jackson, V.-P.; A. T. Rudder, Secy.-Treas.; C. R. Russell, Mgr.; erect \$15,000 building; open proposals in Oct.; machinery arranged for.

La., Alexandria.—Alexandria Cotton Oil Co., capital stock \$80,000, inceptd.; S. B. Brown, Pres.; A. P. Coles, V.-P.; R. G. Riley, Secy.-Treas.

Tex., Celina.—Farmers' Cotton Oil Co. (lately noted as increasing capital to \$42,000) will continue plant; no additional machinery needed.

### DRAINAGE SYSTEMS

La., Gretna.—Fourth Jefferson Drainage Dist. votes Sept. 29 on \$24,000 bonds to construct drainage system in Sub-Drainage Dist. No. 2; A. H. Ahten, Pres. Commrs. Fourth Jefferson Drainage Dist.

Miss., Ripley.—Tallahatchie Drainage Dist. No. 1 of Tippah county will construct drainage canal; bids opened; L. Fryar, Clerk Commissioners.

Mo., Jefferson City.—Grand River Drainage Dist. inceptd. through Dept. of Land Reclamation, John H. Nolan, Commr.; district embraces 22,000 acres alluvial land in South Grand River Valley; construct drainage system estimated to cost \$250,000.

N. C., Salisbury.—Drainage Commrs. will drain Back, Withrows and Second Creeks; cost \$75,000; C. M. Miller, Engr. and Supt., Salisbury. (Previously noted.)

N. C., Salisbury.—Drainage Commrs. for Kerr and Sills Creeks Drainage Dist., Rowan county, will drain Kerr and Sills creeks; remove 329,178 yds. material; cost \$25,500; plans and specifications in clerk's office, Salisbury; C. M. Miller, Engr. and Supt., Salisbury; bids until Oct. 3. (See Machinery Wanted.)

N. C., Salisbury.—Grant's Creek Drainage Dist., Rowan county, let contract to Mark P. Moore, China Grove, N. C., to drain 1829 acres land; construct canal 14 mi. long; 492,866 cu. yds.; straight dredge work; cost \$35,000; machinery secured; lands will be used for agricultural purposes; C. M. Miller, Engr. and Supt. (Lately noted.)

Tenn., Jackson.—Drainage Dist. No. 3, Madison county, A. W. Stovall, Chrmn., will clear right of way 200 ft. wide and construct drainage canal 14.95 mi. long; also 5 small laterals 100 ft. wide; total of 842,854 cu. yds. earth removal; bids until Oct. 1. (See Machinery Wanted.)

Tenn., Selmer.—Geo. A. Prather, Chrmn. of Com., will let contract Oct. 6 to construct drainage canals in Huggins, Sheffield, Lick and Billy's Creeks in northern part of McNairy county, Tenn.; Huggins Creek, 5<sup>7</sup>/<sub>16</sub> mi. long, 20 ft. at top, 13<sup>1</sup>/<sub>2</sub>-ft. bottom, depth 7 ft.; Billy's Creek, 2<sup>1</sup>/<sub>16</sub> mi., 18 ft. at top, 12-ft. bottom, depth 6 ft.; Sheffield's Creek, 2 mi., 8-ft. top, 4-ft. bottom, depth 4 ft.; Lick Creek, 5<sup>1</sup>/<sub>16</sub> mi., 8-ft. top, 4-ft. bottom, depth 4 ft.; work includes clearing right of way. (See Machinery Wanted.)

Tex., Beaumont.—Drainage Dist. No. 4 of Jefferson County will construct drainage canals; 4 canals, aggregating 21.4 mi. in length, bottom widths 6 to 20 ft., depths 6 to 9 ft.; total yardage 628,000 cu. yds., all earth excavation across open prairies; bids received until Sept. 21 at office J. D. Wilkerson, Weiss Bldg. (See Machinery Wanted.)

### ELECTRIC PLANTS

Ark., Arkadelphia.—City Council granted new franchise to Arkansas Power Co.; will furnish additional lights and install pumps and filtering plant at water-works.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Fla., Leesburg.—Leesburg Ice Co., J. Y. Clark, Prest., is building addition to power-house and installing 200 H. P. engine and 125 K. W. generator and switchboard; machinery purchased; construction begun. (Lately noted.)

Fla., Macclenny.—City had surveys made by J. B. McCrary Co., Engr., Atlanta, Ga., for electric-light plant; cost \$7000; plans, estimates and details not yet submitted. (Lately noted.)

Ga., Quitman.—City voted \$40,000 bonds to enlarge electric-light plant and install new equipment, mainly machinery. Address The Mayor.

Ga., Pavo.—City let contract J. B. McCrary Co., Atlanta, Ga., to construct electric-light plant.

Ga., Sycamore.—City let contract to install electric-light system. Address The Mayor.

Ky., Beattyville.—City invites bids for purchase of 20-yr. franchise to furnish electricity; R. B. Jackson, Mayor.

Ky., Carlisle.—Carlisle Electric Light & Power Co. will install improved lighting system and add ice plant.

Ky., Corbin.—City votes in Nov. on \$15,000 bonds to purchase Home Electric Light Co.'s property.

La., Bunkle.—Bunkle Ice Co., Ltd., is negotiating to acquire municipal lighting plant at Bunkle Brick Works; contemplates installing internal combustion engine direct connected to 50 K. W. ampere generator; will change old line from direct to alternating current.

Mo., Hamilton.—Hamilton Light & Power Co., capital \$30,000, inceptd. by C. A. Martin, True D. Parr and J. W. McLean.

N. C., Wallace.—J. L. Boney contemplates installing plant to light town; install dynamo and transformers. (See Machinery Wanted.)

N. C., Wilson.—City will install additional equipment in electric-light and power plant. Address The Mayor.

Okla., Pond Creek.—City contemplates purchasing and installing 50 K. W. generator and exciter, 50 H. P. internal combustion engine two 20 H. P. single-phase motors and two centrifugal pumps in electric-light plant; also proposes to construct about 1½ mi. transmission line. C. C. Shepard, City Supt.

Tenn., Dandridge.—Dandridge Power & Light Co. will build electric plant and furnish electric lights; purchased engine and other machinery.

Tex., Austin.—City appropriated \$4000 to lay conduits for electric-light cables in alley between 7th and 10th Sts.; also contemplates later placing all wires along alleys south of 7th to 5th St., and from power-house along West to 5th Ave.; estimated cost \$20,000.

Tex., Glen Rose.—Glen Rose & Walnut Springs Ry. Co. (J. H. Farr, Walnut Springs, Tex.) is reported to construct power-house.

Tex., Marble Falls.—City defeated bonds for electric-light system; R. E. Johnson, Mayor. (Lately noted.)

Va., Staunton.—City will build lighting plant; contractor, J. M. Lee.

W. Va., Bluefield.—Appalachian Power Co. will construct 80,000-volt transmission line to Mullens, W. Va., 13 mi., and 5 mi. of 13,000-volt distributing line; D. M. Brown, Constr. Supt.

W. Va., Beckley.—Beckley Utilities Co., Jas. Imboden, Engr., Charleston, W. Va., plans to construct electric-light plant; amount to be expended \$100,000; no details determined. (Lately noted.)

W. Va., Kimball.—Kimball Light & Water Co. will petition City Council for franchise to construct and operate electric-light system, water-works, etc.

### FERTILIZER FACTORIES

Ala., Marbury.—Marbury Oil & Fertilizer Co. (lately noted inceptd.), D. H. Marbury, Prest., will open proposals in Oct. for \$15,000 building; arranged for machinery. (See Cottonseed Oil Mills.)

Ga., Brunswick.—Board of Trade negotiating with fertilizer manufacturers relative to establishing factory.

Ky., Mt. Sterling.—Pulverizing.—Montgomery Pulverizing Co. organized; Jas. Hutsell, Prest.; W. A. Sutton, V.-P.; H. R. Prewitt, Secy.-Treas.; will operate plant to pulverize limestone; install machinery to cost \$1500. (Lately noted inceptd., \$1500 capital, under Miscellaneous Factories.)

N. C., Reidsville.—Reidsville Fertilizer Co., capital stock \$25,000, inceptd.; acquired plant of Reidsville Fertilizer Co.; Jas. A. Mon-

cure, Prest., Richmond, Va.; W. F. Burton, Secy.-Treas., Reidsville.

### FLOUR, FEED AND MEAL MILLS

Ala., Montgomery.—R. E. Kolb, Commr. of Agriculture, is reported as interested in plan whereby company will build flour mill with minimum capacity of 50,000 bu.

Ga., Bainbridge.—Crates.—Elberta Crate Co. will build plant.

Ga., Cordele.—N. D. Lewis is promoting erection of flour mill.

Ga., Cordele.—N. D. Lewis contemplates installing flour mill; also mill for grinding corn and mixed feeds. (See Machinery Wanted.)

Ga., Unadilla.—Unadilla Mill Co., capital stock \$5000, inceptd. by J. R. Barfield, Jack Bridges, J. H. Kendrick and others; will establish roller and grist mill.

Ky., Versailles.—Farmers' Union Mill increased capital stock from \$25,000 to \$35,000.

S. C., Columbia.—Adluh Milling Co., capital stock \$25,000, inceptd.; will build meal and feed mill with daily capacity 1200 bu. meal and 60 tons feed; bins and elevators to provide storage capacity for 12,000 bu. grain; plans later to build flour mill; has 198x94 ft. building at 804 Gervais St.; B. R. Cooner, Prest.; J. H. Harding, Secy.

### FOUNDRY AND MACHINE PLANTS

Ky., Hopkinsville.—Hopkinsville Business Men's Assn. interested in proposed establishment of iron foundry.

Miss., Meridian.—Railroad Cars.—Meridian Car Works will be inceptd. to erect plant to build and repair railroad equipment; purchased site; erect buildings to cost \$15,000 to \$20,000; S. A. Neville, V.-P. Meridian & Memphis Ry. Co., is interested.

Mo., St. Louis.—Machinery.—Baumes-McDevitt Machinery Co., capital stock \$12,000, inceptd. by O. R. Baumes, I. M. McDevitt, P. B. Baumes and T. J. McDevitt.

Okla., Henryetta.—Boiler Foundry.—Henryetta Boiler Works, A. Eyster, Prest., Joplin, Mo., will establish plant to mfr. boilers, smokestacks, tanks, etc.; has 40x80-ft. frame building and equipment. (Lately noted as Eclipse Boiler Works of Joplin, Mo.)

Okla., Oklahoma City.—Steel Ties.—Baker Steel Tie Co., capital stock \$10,000, inceptd. by S. Webb, W. F. Baker and R. S. McCabe.

Tex., Victoria.—Safes and Locks.—Victoria Safe & Lock Co. is considering increase of capital stock from \$40,000 to \$150,000, or \$200,000 to provide for enlargement of plant.

W. Va., Grafton.—Foundry, etc.—Hefner & Maysilles, 1 Maple Ave., will install general foundry and machine shop equipment to cost \$15,000; let contracts after Sept. 15; has 100x50-ft. brick building costing \$10,000; machinery to include 42-inch cupola, brass foundry outfit, lathes, drills, forge, etc.; previously mentioned. (See Machinery Wanted.)

W. Va., Wheeling.—Wrapping Machines.—Progressive Mfg. Co. reorganized as Wheeling Wrapping Machine Co.; contemplates manufacturing machines to wrap packages of all kinds; A. E. Summers, Prest.; O. L. Teagarden, Secy.-Treas.

### GAS AND OIL ENTERPRISES

Ala., Woodward.—Gas.—Woodward Iron Co. is reported to build plant to manufacture gas for household purposes, utilizing waste from by-product plant.

Ga., Griffin.—Griffin Gas, Ice & Cold Storage Co. has authority from Georgia Ry. Co. to issue \$100,000 stock and \$100,000 bonds.

Ky., Louisville.—Gas.—Sun-Lite Gas Co., capital stock \$1200, inceptd. by Thomas F. Hackett and Margaret I. Moran of Louisville, Orion K. Stuart and Clarence A. Tucker of Indianapolis, Ind.

Ky., Scottsville.—Walton-Byars Oil Co., capital \$16,000, inceptd. by H. E. Dixon, E. C. Huntsman and Walton Byars.

La., Sulphur.—Investors' Sulphur & Oil Co., E. L. McGehee, Prest., 923 Maison Blanche, New Orleans, La., will drill oil and sulphur wells; lately noted inceptd. at New Orleans, \$50,000 capital. (See Machinery Wanted.)

Okla., Ardmore.—Stockmen's Oil Co., capital \$25,000, inceptd. by D. G. Lucas, John King and Coke W. Harkrider of Fort Worth, Tex.

Okla., Bristow.—Pipe Line.—Indianapolis Refining Co. will construct 3-in. oil pipe line from Bristow to Okmulgee; locate pumping station at Bristow; expects to deliver 2000 bbls. oil daily to Okmulgee.

Okla., Claremore.—Alexander-Powell Oil Co., capital \$10,000, inceptd. by G. W. Fry of Claremore, G. F. Powell and G. W. Alexander of Kansas City, Mo.

Okla., Inola.—Oil Pipe Line.—Inola Pipe Line Co. is reported as planning \$1,000,000 bond issue and construction oil pipe line from Cushing field to Coffeyville and Chanute, Kans.

Okla., Kendrick.—Fager Oil & Gas Co., capital stock \$25,000, inceptd. by Wm. Brown of Avery, Okla.; Thos. B. Fager and Wm. Clopper of Polo, Ill.

Okla., Miami.—Mutual Royalty Co., capital \$50,000, inceptd. by A. K. Wilder and W. H. Trapp of Miami and L. Sheets of Baxter Springs, Kans.

Okla., Okmulgee.—Gas Pipe Line.—Prakla Oil & Gas Co., J. M. Pratt, Prest.-Mgr., will pipe about 2 mi. for gas; construct gas-producing station; lately noted inceptd., \$10,000 capital. (See Machinery Wanted.)

Okla., Tulsa.—Marcia Oil Co., capital \$20,000, inceptd. by D. C. Alcosta, H. C. Candewater and J. T. Lantry.

Okla., Waurika.—Amalco Oil & Gas Co., capital \$10,000, incorporated by W. F. Amls, E. C. Allen and W. P. Amis.

### ICE AND COLD-STORAGE PLANTS

Fla., Lakeland.—Southern Utilities Co., 916 Heard National Bank Bldg., Jacksonville, Fla., has not as yet formed plans to erect pre-cooling plant lately reported.

Fla., St. Petersburg.—St. Petersburg Ice & Cold Storage Co. will improve plant and install additional equipment, including 200 H. P. boiler, increasing generating capacity of plant to 600 H. P.; also build concrete chimney 102 ft. high.

Ga., Griffin.—Griffin Gas, Ice & Cold Storage Co. has authority from Georgia Ry. Co. to issue \$100,000 stock and \$100,000 bonds.

Ky., Carlisle.—Carlisle Electric Light & Power Co. will install ice plant. (See Electric Plants.)

Md., Gambrills.—Bureau of Supplies and Accounts, Navy Dept., Washington, D. C., will install refrigerating and ice plant at Naval Academy dairy farm; bids until Sept. 22; Sam McGowan, Paymaster-General, U. S. N. (See Machinery Wanted.)

Miss., Okolona.—Okolona Ice Factory, John K. Kaye, Propr., will add small cold-storage room to present plant; install belted compressor of about 2 or 3 tons capacity; will not install larger ice machine; lately noted. (See Machinery Wanted.)

Okla., Blackwell.—City contemplates constructing ice plant. Address The Mayor.

### LAND DEVELOPMENTS

Ala., Florence.—Allentown Power Co., N. F. Thompson, Prest., Birmingham, will subdivide land and build summer homes, beautify hills near plant, etc., in connection with development of water-power.

Ark., Jonesboro.—Lafon Land Co., capital stock \$25,000, inceptd.; A. M. Lafon, Prest.

Fla., Crooked Lake.—Crooked Lake Development Co., capital stock \$10,000, inceptd.; Walter B. McLaughlin, Prest.; Ernestine L'Rose Lau, V.-P.; Geo. W. Eyster, Secy.-Treas.

Fla., De Leon.—De Leon Springs Shell Co. organized with \$15,000 capital; Geo. McW. Le Fevere, Secy.-Treas.; will develop 250 acres near De Leon Springs for raising hogs and selling shell for road improvement. (F. N. Burt, Buffalo, N. Y., lately noted at De Land, Fla., as purchasing 1000 acres for development.)

La., Alexandria.—Bellevue Plantation Co., capital stock \$50,000, inceptd.; Wm. T. Ney, Prest.; Wm. H. Ney, V.-P.; Robt. J. Ney, Secy.-Treas.

La., New Orleans.—Rennysen Co., I. B. Rennysen, Prest., 401 Carondelet St., inceptd. with \$150,000 capital; will develop 1000 acres 3 mi. north of New Orleans for suburban residence section. (Lately noted.)

N. C., Wilson.—Home Realty & Development Co., capital \$25,000, inceptd. by L. E. Knott, B. F. Giles, Jr., and R. A. Turlington.

Tex., Houston.—City will vote on \$250,000 bonds to improve city parks and city generally. E. E. Sands, City Engr.

Va., Lynchburg.—J. R. Ford will develop 93 acres fronting 300 ft. on Campbell Ave. Rd.; extend concrete sidewalk from Fairview Heights; divide tract into 329 building lots.

Va., Richmond.—Common Council is considering resolutions appropriating \$50,000 to beautify Byrd Park and \$10,000 to purchase land adjacent to Riverview; Chas. E. Boling, City Engr.

Va., Staunton.—Union Apple Co. increased capital stock from \$25,000 to \$100,000; remove main office from Alexandria to Staunton.

### LUMBER MANUFACTURING

Ala., Mobile.—A. J. Spencer Lumber Co. will rebuild burned sawmill on Three-Mile Creek; purchased equipment of 50,000 ft. daily capacity; cost, with buildings, \$25,000.

Ark., Waldron.—Waldron Planing Mill Co., J. S. Hill, Prest., will operate planing mill; machinery installed. (Lately noted inceptd., \$6000 capital.)

Fla., Ocala.—Kumbach Lumber Co., capital stock \$5000, inceptd.; F. J. O'Hara, Prest.; Wade H. Lowry, Secy.-Treas.

Ky., Louisville.—Stemmelen & Fullenore Co., Keller Bldg., inceptd. with \$10,000 capital; succeeds Stemmelen Lumber Co.; E. F. Stemmelen, Prest.; Jos. E. Stemmelen, V.-P.; Thos. J. Fullenore, Secy.-Treas.

Ky., Versailles.—Farmers' Union Mill will increase capital from \$25,000 to \$75,000.

La., Carson.—Delta Land & Timber Co. (Central Coal & Coke Co., Kansas City, Mo.) will rebuild plant reported burned; 2 band and 1 gang saws; drykilns; concrete and brick construction; daily capacity, 150,000 ft. lumber; cost new plant about \$250,000.

N. C., Asheville.—Foy-Seawell Lumber Co., capital stock \$10,000, inceptd. by A. B. Foy, J. J. Seawell and J. M. Campbell.

N. C., Oriental.—Ransom Lumber Co., capital stock \$20,000, inceptd. by S. B. Ransom, H. F. Newhouse and H. L. Gibbs.

S. C., Columbia.—Cayce Lumber Co., capital stock \$6000, inceptd. by L. J. Hardin of Columbia, A. S. Nunnemaker of Blythewood, S. C., and S. M. Corley of Lexington, S. C.

S. C., Varnville.—Big Salkahatchie Cypress Co. organized; Prest., H. B. Hewes, Jeanerette, La.; 1st V.-P., R. H. Downman, New Orleans; 2d V.-P. and Gen. Mgr., E. C. Glenn, Varnville; Secy.-Treas., R. L. Montague, Charleston, S. C.; will develop 14,000 acres timber land in Salkahatchie River Valley; proposes annual capacity 17,000,000 ft. lumber; will erect wood and concrete building, costing \$30,000 to \$40,000, for saw and planing mills; product, lumber, shingles and laths. (Lately mentioned.)

W. Va., Meadow River (not a P. O.).—Meadow River Lumber Co., Cincinnati, O., is reported to have filed deed of trust securing \$1,000,000 bonds to develop 40,000 acres timber land, buy additional timber property and retire bonds; plans to build additional railroads, saw-mills and towns; in Fayette and Nicholas counties; on Meadow River Railroad.

### METAL-WORKING PLANTS

Fla., Tampa.—Tin Shingles.—Southern Roofing Co., capital stock \$100,000, inceptd. to manufacture patented reversible tin shingles for roofing; J. T. Tucker, Prest.; Jas. M. Stark, Secy.-Treas.

### MINING

Ala., Jackson County.—Saltpeper.—E. B. Wallace, Cullman, Ala., has, it is reported, purchased and will develop property including bat cave claimed to contain large quantities saltpeper, guano, etc.; Ross Chester Wallace, Philadelphia, is said to have made estimate of quantities.

Ala., Littleton.—Iron Ore.—Flacks McDuffie, Attalla, Ala., is reported to develop iron-ore mines near Littleton.

Ala., Tuskegee.—Sand and Gravel.—Chaw Gravel & Sand Co., E. D. Brewer, Prest., 816 Atlanta National Bank Bldg., Atlanta, Ga., will develop 500 acres sand and gravel deposits; daily capacity, 10 cars; machinery purchased. (Lately noted at Chaw, Ala.)

Ala., Verbena.—Iron.—Chilton Mining & Mfg. Co. will develop iron-ore lands.

Mo., Seligman.—Chas. Smith of Memphis, Tenn., is reported to have leased portion of Radium Spring tract and to prospect for minerals.

Tenn., Chattanooga.—Iron.—Castlebrook Coal & Iron Co., capital stock \$25,000, inceptd. by F. W. Dillon, S. C. Tarver, C. A. Hall and others.

Tenn., Embreeville.—Zinc.—Embree Iron Co., Chicago, Ill., is reported as planning to construct large smelting plant in connection with zinc developments.

Tenn., Sweetwater.—Barytes.—W. D. Gilman purchased W. D. Gilman & Co.'s barytes plant for \$30,000 and will operate.

Tex., Dallas.—Gravel and Sand.—West Dallas Gravel & Sand Co., capital stock \$20,000, inceptd. by T. S. Craven, J. B. Rucker and others.



Tex., Leakey-Kaolin.—L. J. Smith & Co., Kansas City, Mo., will develop kaolin mines near Leakey; constructing railroad through property.

Tex., Leakey-Kaolin.—C. Crenshaw will not develop kaolin deposits; merely locates materials for parties interested in development. (Lately noted.)

Tex., Muldoon-Kaolin.—Frank A. Sebring of Sebring China Pottery Co., Sebring, O., has not perfected plans for kaolin development; now experimenting with the clay; does not expect to begin shipping for some time.

Va., Charlottesville.—Sand and Gravel.—Charlottesville Sand & Gravel Corp., capital \$5,000, chartered; E. A. Peyton, Pres.; W. J. Keller, Secy.-Treas.

### MISCELLANEOUS CONSTRUCTION

Ala., Mobile.—Docks.—City contemplates securing additional water-front property and building docks and warehouses, initial expenditure to be \$500,000; Pat J. Lyons, Mayor.

Fla., Miami.—Docks.—Miami Ice & Cold Storage Co. advises that Southern Utilities Co., Miami, is doing no construction work at present. (Latter company lately noted to build wharves and docks, etc.)

Fla., Miami.—Docks.—City engaged Isham Randolph, Engr., Chicago, Ill., to prepare plans for municipal docks and harbor; submitted 3 tentative plans, each calling for docks 1000 ft. long with railroad trackage and accommodations ranging from 4 to 8 boats. J. W. Watson, Mayor. (Noted in July.)

Mid., Baltimore.—Earth Fill.—Maryland State Roads Com. O. E. Weller, Chmn., 601 Garrett Bldg., will construct fill at end of Hanover St. bridge; about 10,000 cu. yds.; bids until Sept. 16. (See Machinery Wanted.)

Tenn., Chattanooga.—Interlocking Plant, etc.—Queen & Crescent Route, H. Baker, Gen. Mgr., Cincinnati, O., has authorized expenditure of \$80,000 in extension work on Belt Ry. of Chattanooga; work includes extension to present interlocking plant at East End Ave. and constructing interlocking plants at crossing of tracks of Central of Georgia Ry. and Chattanooga Belt Line at Missionary Ave., and South End shipyards; also install automatic signals on double-track line.

Tenn., Jellico.—Tunnels, etc.—Jellico Coal & R. R. Co., D. C. Barker, Ch. Engr., will construct tunnel 300 ft. long and another 1½ mi. long, etc. (See Bridges, Culverts, Viaducts.)

Tex., Eagle Lake.—Levee.—J. C. Nagel and G. B. Abney, Engrs., both of Eagle Lake, completed plans for levee work to cost \$67,000.

Tex., Galveston.—Pier.—Arthur Duchamp, Engr. (registered at Galves Hotel) prepared tentative plan for recreation pier to extend from seawall 1100 ft. into Gulf and provide for various amusement enterprises; estimated cost \$100,000.

Tex., Houston.—Dredging.—City appropriated \$12,000 to dredge Buffalo bayou from San Jacinto St. to Turning Basin. E. E. Sands, City Engr.

Tex., Houston.—Wharves, etc.—City votes Oct. 28 on \$3,000,000 bonds for wharves, warehouses, slips and rail terminals on city's water frontage near turning basin; now having plans prepared for pier, with slips and warehouses on ship channel below turning basin; first wharves to have frontage of 1000 ft.; use creosoted timber; E. E. Sands, City Engineer. (Further facts lately noted.)

Tex., Houston.—Wharf.—J. F. Coleman, Consult. Engr. for Harbor Board, approved plans for wharf 1000 ft. long on Ship Channel below Turning Basin; city will vote on \$5,000,000 of bonds, of which \$3,000,000 will be expended for turning basin, wharves and terminals; E. E. Sands, City Engr. (Further facts lately noted.)

Tex., Orange.—Docks.—Southern Pacific System, H. F. Jonas, Engr. of Structures, Houston, will probably not build docks for one year. (Lately reported.)

Tex., Port Aransas.—Dredging.—Government will expend \$8000 to dredge channels, 100x12 ft., and turning basin 200 ft. sq.; no machinery needed; contract let to John Jacobson, Texas City. (Lately noted.)

W. Va., Charleston.—Retaining Wall.—Board of Affairs let contract Board & Reed of Charleston at \$21,624 to construct concrete retaining wall along levee; about 7400 lin. ft. piling and 2200 cu. yds. concrete masonry; Engr., G. S. Brown, Loewenstein Bldg. (Call for bids lately noted.)

W. Va., Huntington.—Subway.—City votes Sept. 19 on \$25,000 bonds to construct underground crossing at 10th St. and C. & O. R. R. Floyd S. Chapman, Mayor.

W. Va., Parkersburg.—Tunnels.—Charles-ton, Parkersburg & Northern Ry., Robt. Cutler, Ch. Engr., is reported as contemplating construction of 5 tunnels, varying in length from 800 to 2300 ft., on railway from Parkersburg to Charleston, about 75 mi.

### MISCELLANEOUS ENTERPRISES

Ala., Athens.—Laundry.—Chas. I. Smith of Birmingham will install steam laundry in Hesser Bldg.; estimated cost, \$5000.

Ala., Birmingham.—Contracting.—International House Building Co., \$5000 capital, inctpd.; John W. Striet, Pres.; Fred M. Striet, Secy.-Treas.

Ark., Little Rock.—Construction.—Halleck & Thorn Construction Co., capital stock \$10,000, inctpd. by E. J. Hahn, R. W. Gould and John F. Clifford.

Ga., Atlanta.—Incinerator.—City let contract City Disinfecting & Refining Co., Nashville, Tenn., to build incinerating plant for dead animals.

Ga., Augusta.—Contracting.—A. J. Martin Co., capital stock \$250,000, inctpd. by A. J. Martin and C. R. Dawson of Augusta, S. A. Patterson of Danville, Va., and H. S. Bosler of Portsmouth, O.

Ky., Louisville.—Contracting, etc.—Butler-Tyler Co., capital stock \$10,000, inctpd. by Pierce Butler, Henry S. Tyler and R. A. Dean.

Ky., Pineville.—Laundry.—Pineville Steam Laundry, capital \$5000, inctpd. by A. P. Liebig and J. J. Ballard.

Miss., West Point.—Publishing.—West Point Publishing Co., capital stock \$10,000, inctpd. by L. T. Carlisle, H. L. Finn, W. S. Fisher and others; takes over Bailey plant and will continue publishing business; organization not complete; contemplates additions to plant.

Mo., Kansas City.—Hardware, etc.—H. J. Brunner Hardware & Machinists' Supply Co., capital \$10,000, inctpd. by M. E. Brunner, L. B. Hohenschild and F. X. Brunner.

N. C., Elizabeth City.—Crematory.—City is considering installation of crematory. Address The Mayor.

N. C., Hillsboro.—Publishing.—Hillsboro Publishing Co., capital \$10,000, inctpd. by John T. Johnston, S. A. Campbell and Thos. E. Lynch.

N. C., Kinston.—Publishing.—Kinston Publishing Co. organized; Wm. Hays, Pres.; J. O. Miller, V.-P.; W. M. Beasley, Secy.-Treas.; will conduct publishing plant; machinery purchased. (Lately noted inctpd., \$10,000 capital.)

N. C., Rocky Mount.—Dairy.—Rocky Mount Dairy Co., capital \$5000, inctpd. by R. H. Moore, H. L. Burke, T. H. Lancaster and others.

N. C., Hendersonville.—Hardware.—Station Hardware Co., capital stock \$10,000, inctpd. by W. G. Staton, Victor Staton, C. G. Jones and Josephine Jones.

Okla., Cushing.—Construction.—Cushing Construction Co., capital stock \$5000, inctpd. by R. D. Long of Muskogee, Frank Brown and Harry W. Jones of Independence, Kan.

Okla., Okmulgee.—Incinerator.—City opens bids about Nov. 1 to construct fireproof incinerator plant; cost \$5000; R. H. Jenness, Commr. of Finance. (Lately noted as voting \$5000 bonds.)

Okla., McAlester.—Laundry.—Royal Laundry Co., capital stock \$5000, inctpd. by J. D. Jones, W. C. Shoemaker and Margaret J. Jones.

Okla., Tulsa.—Publishing.—Oklahoma Oil & Gas New Publishing Co., capital \$5000, incorporated by H. L. Wood, A. V. Wood and E. L. Admire.

S. C., Anderson.—Laundry.—E. R. Horton, Prest. Anderson Real Estate & Investment Co., is reported to build steam laundry costing \$15,000 to \$20,000.

Tex., Marble Falls.—Disposal Plant.—City defeated bonds for garbage-disposal plant; R. E. Johnson, Mayor. (Lately noted.)

Va., Norfolk.—Transfer.—Harrison Transfer Co., capital \$2000, inctpd.; H. H. Harrison, Pres.; Robt. N. Groner, Secy.

W. Va., Huntington.—Police-alarm System.—City votes Sept. 19 on \$5000 bonds to purchase and install additional police-alarm equipment. Floyd S. Chapman, Mayor.

W. Va., Logan.—Publishing.—Logan Banner Co., capital \$10,000, inctpd. by E. T. England, Ira P. Hager, O. J. Deegan and others.

W. Va., New Cumberland.—Printing and Publishing.—Courier Printing Co., capital stock \$5000, inctpd. by John R. Plattenburg, Geo. L. Bambrick, Jas. L. McFadden and others.

### MISCELLANEOUS FACTORIES

Ala., Birmingham.—Beverages.—Viva Beverage Co., capital stock \$25,000, inctpd.; Geo. E. Brett, Pres.; N. S. Brett, V.-P. and Treas.; R. J. McClure, Secy.

Ala., Birmingham.—Bottling.—Clio-Ola Co., capital stock \$10,000, inctpd.; A. J. Clark, Pres.; John May, V.-P.; W. M. Martin, Secy.-Treas.

Ark., Blytheville.—Water Filters.—J. A. Reece will erect building, 65x35 ft., and equip to mfr. water filters.

Ga., Augusta.—Tires and Rubber.—Berrie Tire & Rubber Co., capital stock \$3000, incorporated by F. E. Berrie, J. R. White and J. L. Ergle.

Ga., Brunswick.—Bottling.—J. W. Giddens of Swainsboro, Ga., and others contemplate building bottling plant. (See Ga., Waycross.)

Ga., Jesup.—Bottling.—J. W. Giddens of Swainsboro, Ga., and others contemplate building bottling plant. (See Ga., Waycross.)

Ga., Waycross.—Bottling.—J. W. Giddens of Swainsboro, Ga., and others organized company; propose to build bottling plants at Waycross, Jesup, Brunswick and other cities.

Ky., Louisville.—Tobacco.—Axton Fisher Tobacco Co. will expend \$35,000 to \$40,000 to erect factory; to include 5-story 120x68 ft., 1-story 185x62 ft., and 1-story 60x52 ft. buildings; fireproof; tar and gravel roof; exhaust steam heat to cost \$3000; electric lighting, \$1000; power-house, \$5000; elevator, \$1000; Val P. Collins, Archt., Paul Jones Bldg., Louisville; contract (lately noted) let to Geo. H. Skilton, Louisville.

Ky., Frankfort.—Glass Bottles.—Frankfort Modes Glass Works will, it is reported, remodel plant.

Ky., Glenarm.—Motion Pictures.—Bluegrass Motion Picture Mfg. Co. organized; Geo. P. Kendrick, Pres.-Treas.; I. D. Martin, Secy.; erect 40x32 ft. wooden building; install motion picture apparatus of all kinds; capacity 2000 ft. films per week. (Lately noted inctpd., \$25,000 capital.)

Ky., Vanceburg.—Pearl Buttons.—Vanceburg Pearl Button Co., capital \$5000, inctpd. by Geo. B. Anthony, R. D. Wilson and T. C. Wilson.

Miss., Clarksdale.—Cigars.—Progressive Club arranged for Florida cigar manufacturers to establish factory.

Mo., St. Louis.—Signs.—Brilliant Sign Co., 420 N. 8th St., will rebuild burned plant.

Mo., St. Joseph.—Batteries.—St. Joseph Battery Co., 220 S. 8th St., organized; H. D. Brach, Pres.; G. H. Furbeck, V.-P. and Mgr.; L. C. Bauman, Secy.; A. S. Gellespie, Treas.; has 140x30 ft. 2-story building; will install electrical motors, etc.; has ordered machinery. (Lately noted inctpd., \$30,000 capital stock.)

Mo., St. Louis.—Films.—Warner's Features Corp., capital stock \$2000, chartered by Ralph A. Pinkham, Jos. C. Cannon, Erwin C. Wolfe and others.

Mo., St. Louis.—Water Heaters, etc.—Zuber Mfg. Co., capital stock \$25,000, inctpd. by Gottlieb Zuber, Fred Girtanner and Alex Girtanner.

N. C., Asheville.—Bottling.—Gin-Gera Bottling Co. of North Carolina, F. B. Howard, Mgr., 852 Granby St., Norfolk, Va., will operate bottling plant. (See N. C., Raleigh.)

N. C., Charlotte.—Bottling.—Gin-Gera Bottling Co. of North Carolina, F. B. Howard, Mgr., 852 Granby St., Norfolk, Va., will operate bottling plant. (See N. C., Raleigh.)

N. C., Hamlet.—Bottling.—Gin-Gera Bottling Co. of North Carolina, F. B. Howard, Mgr., 852 Granby St., Norfolk, Va., will operate bottling plant. (See N. C., Raleigh.)

N. C., Greensboro.—Bottling.—Gin-Gera Bottling Co. of North Carolina, F. B. Howard, Mgr., 852 Granby St., Norfolk, Va., will operate bottling plant. (See N. C., Raleigh.)

N. C., Lumberton.—Thermometers.—Jordan Mfg. Co. will be organized to mfr. electric alarm thermometer (heat and cold regulator for tobacco barns) invented by B. W. Jordan; will install woodworking equipment, metal-working machinery, etc. (See Machinery Wanted.)

N. C., Raleigh.—Bottling.—Gin-Gera Bottling Co. of North Carolina, F. B. Howard, Mgr., 852 Granby St., Norfolk, Va., will operate bottling plants in Hamlet, Raleigh, Greensboro, Charlotte, Asheville and Wilmington, N. C.; no machinery bids asked; property mainly leased. (Lately noted inctpd., \$100,000 capital.)

N. C., Wilmington.—Bottling.—Gin-Gera Bottling Co. of North Carolina, F. B. Howard, Mgr., 852 Granby St., Norfolk, Va., will operate bottling plants in Hamlet, Raleigh, Greensboro, Charlotte, Asheville and Wilmington, N. C.; no machinery bids asked; property mainly leased. (Lately noted inctpd., \$100,000 capital.)

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Mgr., 852 Granby St., Norfolk, Va., will operate bottling plant. (See N. C., Raleigh.)

S. C., Greenville.—Tires.—Standard Tire & Rubber Co. organized; J. D. Bridges, Pres.-Secy.; S. E. Brown, V.-P.-Treas.; lease building and conduct distributing station for mfrs. of rubber tires; will not mfr. (Lately noted inctpd., \$5000 capital.)

Tenn., Knoxville.—Films.—Tennessee Industrial Film Co., capital \$12,000, inctpd. by R. C. Wright, E. A. Sehorn, Chas. I. Barber and others.

Tenn., Knoxville.—Tennessee Industrial Film Co., capital stock \$12,000, inctpd.; R. M. Shaw, Pres.; R. M. Hill, Secy.; E. M. Sehorn, Treas.; erect fireproof building; cost \$8000; install modern motion-picture printers, perforators, cameras and film-cleaning machines. (See Machinery Wanted.)

Tenn., Memphis.—Plea.—Connecticut Pie Co. has increased capital stock from \$5000 to \$10,000.

Tex., Dallas.—Soap.—D. H. Swartz contemplates building soap factory to cost \$50,000, including equipment.

Tex., Fort Worth.—Tobacco.—E. E. Budanau, Oklahoma City, Okla., is reported to build tobacco factory.

Tex., Mt. Pleasant.—Peanuts, etc.—H. W. Peterman contemplates erecting peanut and canning factory. (See Machinery Wanted.)

Tex., Wichita Falls.—Marble and Granite.—Wichita Falls Marble and Granite Works will install additional machinery, including compressor, doubling capacity of plant.

Va., Haysi.—Bottling.—McClure Bottling Co., capital \$5000, inctpd.; O. L. Scyphers, Pres.; Haysi; G. C. Anderson, Secy.-Treas., Mart, Va.

Va., Norfolk.—Bottling.—Ok-Ola Mfg. Co., capital stock \$15,000, inctpd.; Harry Smith, Pres.; T. B. Wright, Secy.

### MOTORS AND GARAGES

Ala., Bessemer.—Automobiles.—Bessemer Transfer & Auto Co., capital stock \$5000, inctpd.; E. A. Veith, Pres.; D. M. North, V.-P.; W. T. Warlick, Secy.-Treas.

Ark., Argenta.—Automobiles.—W. F. Brawley Motor Co., capital stock \$10,000, inctpd. by Wm. F. Brawley, John D. Staples and W. R. Deener.

Fla., Tampa.—Garage.—E. E. Cone will erect 2-story brick garage.

Mo., St. Louis.—Automobile Repairing.—West End Auto Repair Co. (H. Clise, owner) will install additional repair machinery.

Mo., St. Louis.—Garage.—Guardian Realty Co., Jas. C. Campbell, Pres., will erect building, mainly for use of sellers of automobiles and automobile accessories; structure will be one story; frontage, 103 ft.; brick and concrete; fireproof; front of glass; tile floors; 4 storerooms; cost \$30,000.

N. C., Charlotte.—Assembling Plant.—Ford Motor Co. of Detroit, Mich., is reported as contemplating erection of assembling plant; will establish branch office in Wadsworth Bldg., 222 N. Tryon St.

N. C., Charlotte.—Automobiles.—Motor Sales Co., capital stock \$50,000, inctpd. by E. T. James, J. A. Rose, W. L. Nicholson and J. S. Squires. (W. L. Nicholson lately noted to have let contract Probst & Overcash of Charlotte to erect building for Motor Sales Co.)

N. C., Rutherfordton.—Automobiles.—Thermal Belt Auto & Livery Co., capital stock \$75,000, inctpd. by Jas. Arnette, R. M. Simmons and Barney Butler.

Okla., Blackwell.—Garage.—Rice Auto Co. will build garage; fireproof; saw-tooth roof.

Okla., Broken Arrow.—Automobiles.—F. O. B. Automobile Co., capital stock \$1000, incorporated by R. R. Herd, H. C. Hunnecker and L. F. Copeland.

S. C., Florence.—Automobiles.—Florence Motor Co. takes over Aldermen Motor Co.; deals in automobiles. (Lately incompletely noted.)

Tenn., Memphis.—Garage.—Tennessee Garage Co., capital stock \$10,000, inctpd. by Joe Friedlander, L. H. Friedlander, R. W. Burke and others.

Tex., Dallas.—Garage.—M. Faber has contract to erect garage at Gano and Ervay Sts.; ordinary construction; composition roof; cost \$10,000; Lang & Wittich, Architects, Dallas.

Tex., Dallas.—Garage, etc.—P. P. Martinez, 1808 Main St., opens bids in about two weeks to erect garage and store building; 100x36 ft.; 2 stories; tin roof; electric elevator; cost \$25,000. (See Machinery Wanted.)

Va., Richmond.—Garage.—W. A. Walker will remodel brick garage in rear of 9 N. Belvidere St.; cost \$8500.

Va., Roanoke.—Automobiles.—Overland Roanoke Co., capital \$10,000, incptd.; Gordon Lefevre, Pres.; F. S. Cooper, Secy.-Treas.; conduct sales agency for automobiles and trucks and machine shop; machinery purchased.

### RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Miss., Asylum.—Illinois Central R. R., A. S. Baldwin, Chief Engr., Chicago, Ill., is reported to expend \$50,000 to build roundhouse, turntables, coal chute, water tank, side-tracks and 11 small buildings; let contract Geo. B. Swift & Co. of Chicago to build roundhouse, turntables and buildings, and to Ogle Construction Co. of Chicago to build coal chute and water tank.

Miss., Meridian.—Meridian & Memphis Ry. Co., S. A. Neville, V.-P., purchased site on Southside on which to build shops and terminal station.

### ROAD AND STREET WORK

Ala., Birmingham.—City will pave curbs and gutters on Walnut St.; cost \$7000; Julian Kendrick, City Engr.

Ala., Birmingham.—City instructed Julian Kendrick, City Engr., to draw ordinance for grading, macadamizing, curbing, gutters and cement sidewalks on 12th Ave. between 13th and 16th Sts., 33d Ave. between 27th and 28th Sts., 3d Ave. from 35th to 29th St.; cost \$15,000.

Ala., Birmingham.—City will construct concrete sidewalk paving on Pike Ave., Ensley; about 1500 sq. yds.; cost \$1200; Julian Kendrick, City Engr.; bids until Sept. 15. (See Machinery Wanted.)

Ala., Centerville.—Bliss County Comms. will receive bids until Sept. 24 to construct 3-mi. State-aid road and about 8 mi. county roads; roads to be graded, drained and surfaced with chert; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Gadsden.—Etowah county votes Nov. 3 on \$200,000 bonds to construct roads. Address County Comms.

Ala., Gadsden.—City Council passed ordinance providing for curb and gutter on Walnut St.; cost \$7000; Chas. L. Marsh, City Engineer.

Ala., Hamilton.—Marion County Comms., Mack Pearce, Probate Judge, will grade and drain about 50 mi. road; bids received Oct. 9; S. E. Neill, Highway Engr. (See Machinery Wanted.)

Ala., Lafayette.—W. S. Keller, State Highway Engr., Montgomery, let contract at \$10,570 to grade and drain Lafayette-Opelika Rd. (Call for bids lately noted.)

Ala., Mobile.—Mobile County Supvs. do not contemplate issuing \$50,000 bonds for Dist. No. 8; Fay McClure, County Highway Engr. (Lately noted as authorizing \$50,000 bonds.)

Ala., Tuskegee.—City will make improvements to streets; amount available, \$15,000; bids open Nov. 10; Ernest W. Thompson, Mayor; city lately noted as voting \$15,000 bonds. (See Machinery Wanted.)

Ark., Star City.—Road Improvement Dist. No. 2 of Lincoln county let contract E. A. Hensley and John Perdue to build macadam road from Star City to Jefferson county line; length 23 mi.; cost \$108,000; Engr., C. F. Moore of Pine Bluff. (Lately noted.)

Fla., Fort Myers.—City let contract to W. R. Wallace & Co., Fort Myers, to construct 2500 yds. concrete street paving; Davidson & Son, Engrs.; lately noted. (See Machinery Wanted.)

Fla., Pasagril.—Town will lay sidewalks; bids until Sept. 18; Jas. Henry, Town Clk. (See Machinery Wanted.)

Fla., Tarpon Springs.—City let contract J. B. McCrary Co., Atlanta, Ga., to pave streets; voted \$35,000 bonds. (Noted in Feb.)

Fla., West Palm Beach.—Palm Beach county votes Oct. 13 on creation of special road and bridge district to construct various roads, expending about \$28,900, and bridges to cost \$6100. R. H. Rousseau, Chrmn. County Comms.

Ga., Albany.—Dougherty county defeated \$30,000 bonds to construct roads. (Lately noted.)

Ga., Morgan.—Calhoun County Comms. have rescinded order for election to vote on \$100,000 bonds to construct roads; Z. T. Rabun, Chrmn. of Board. (Lately noted.)

Ga., Quitman.—City voted \$35,000 bonds to pave concrete sidewalks; date of opening bids not determined. Address The Mayor.

Ky., Louisville.—Board of Public Works let contract Roscoe Butler to construct concrete sidewalks on 41st, Market and other streets.

Ky., Maysville.—Mason county is reported to vote Nov. 3 on \$200,000 bonds to improve roads. Address County Comms.

Ky., Maysville.—Mason county votes Nov. 3 on \$200,000 bonds to reconstruct and maintain roads. Address County Comms.

Ky., Middlesboro.—City will pave Cumberland Ave. from 17th to 26th St. with macadam asphalt. Address The Mayor.

Ky., Middlesboro.—City will pave Cumberland Ave. from 17th St. to 26th St. and from 17th to 10th St.; 10th St. from Cumberland to Avondale Ave., Avondale Ave. from 10th to 6th St., etc.; all with asphalt macadam on broken stone base and concrete gutters; J. L. Manring, Mayor.

La., Gretna.—Jefferson Parish Police Jury is considering plans for road from Jefferson parish to Belle Chasse, Plaquemines parish; length 6 mi.; shell metal surfacing; estimated cost \$95,000.

La., Thibodaux.—Lafourche parish will vote on tax to construct road from Bayou des Allemands to Bayou Lafourche, 14 mi. Address Police Jury.

Md., Baltimore.—City rejected bids to construct Road No. 1, contract No. 32, improvement of Gunpowder supply; will readvertise for bids; Ezra B. Whitman, Consult Engr.; Robt. L. Clemmitt, Water Engr. (Call for bids lately noted.)

Md., Highlandtown, P. O. at Baltimore.—Baltimore County Comms., Towson, instructed W. G. Suro, County Roads Engr., Courthouse, Towson, to invite bids to improve Eastern Ave. from city limits to 8th St.; 5260 ft. armored concrete curb, 409 sq. yds. wood block runners, 600 ft. headers, 962 sq. yds. brick gutter, 7570 sq. yds. paving and 300 sq. yds. cobble; amount available, \$18,000 to \$20,000; bids opened Sept. 24. (See Machinery Wanted.)

Miss., Columbus.—Lowndes county will vote on \$50,000 bonds to improve roads in Second Dist. Address County Comms.

Miss., Columbus.—Lowndes County Supvs. ordered \$50,000 bond issue for road improvements in Road Dist. No. 2; Chas. L. Wood, Engr., Columbus. (Lately noted.)

Miss., Corinth.—Alcorn County Comms. let contract to Baker & Coleman, Corinth, to grade and macadamize about 10 mi. road; amount available, \$50,000; Gus. E. Hauser, Jr., Engr., Aberdeen, Miss. (Lately noted.)

Miss., Macon.—Dist. No. 3, Noxubee county, will grade Columbus, DeKalb and Cooksville roads; Dist. Comms. (S. M. Thomas and others) receive bids until Sept. 26. (See Machinery Wanted.)

Miss., Meridian.—Lauderdale county votes Nov. 3 on \$50,000 bonds to construct roads. Address County Comms.

Miss., Pittsboro.—Calhoun county will construct road from Pittsboro to Eastern boundary line of Supvs. Dist. No. 1 and road leading from there to Loosachoon River at crossing near Old Town; bids until Oct. 6; A. A. Bruner and W. R. Byars, Highway Comms. (See Machinery Wanted.)

Miss., Sherman.—City will issue \$10,000 bonds to improve streets. J. Y. Wright, Mayor.

Miss., Starkville.—Oktibbeha county votes Sept. 25 on \$130,000 bonds to construct roads in Beat 1. Address County Comms. (Lately noted.)

Mo., Carthage.—City will construct curbs and gutters of sawed limestone; reported as receiving bids; Jas. B. Loyd, City Clerk.

Mo., Maryville.—Lincoln township of Nodaway county votes Sept. 29 on \$25,000 bonds to construct roads. Address County Comms.

Mo., Springfield.—City let contract E. L. Meek for concrete paving on Pearl St., State to Madison, and Mt. Vernon St.; also for concrete curb and gutter on Atlantic St. and Benton Ave.; S. R. Fisher, City Engr.

Mo., St. Joseph.—City will pave with concrete highway from 2d St. and Hamburg Ave. via 7th St., Independence Ave., 5th St. and Hamburg Ave., and construct concrete sidewalks, steps and curbing; also for paving with concrete portions of 12th and 16th Sts.; bids until Sept. 15; Fred W. Lauder, Clerk.

N. C., Asheville.—Buncombe County Comms. will regrade and resurface Asheville to Weaverville Rd.; recommends top or wearing surface of bituminous macadam on 4-in. foundation; bids until Oct. 17; companies using amesite, tarvia, warrentite, brick and other special bituminous binders be asked to bid; Chas. H. Neal, County Engr. (See Machinery Wanted.)

Tenn., Jackson.—City will construct 11,946 lin. ft. bitulithic pavement; bids opened Aug. 11; John L. Williams, City Engr. (Lately noted.)

Tenn., McEwen.—City let contract to construct concrete sidewalks. Address The Mayor.

Tenn., Nashville.—City contemplates paving West End Ave. with wood blocks; J. M. Wilkerson, Commr.

Tex., Anderson.—Grimes county will improve roads and construct bridges, expending \$30,000 bonds issued. Address County Comms.

Tex., Austin.—Hays county, J. R. Wilhelm, Judge, will surface with gravel 24.6 mi. Austin-San Antonio Highway; amount available, \$70,960; bids opened about Oct. 20; J. W. Janssen, Engr., San Marcos, Tex.; Mr. Janssen lately noted as to submit report about Sept. 30 for preliminary work. (See Machinery Wanted.)

Tex., El Paso.—El Paso County Comms. voted to construct asphalt road from Yaleta to Quadrilla; cost about \$100,000.

Tex., Fort Bliss.—City let contract Jennings & Woods of El Paso at \$10,200 to construct concrete roads, drives and cement walks.

Tex., Houston.—City will construct sidewalks, driveways and curbs upon grounds of North Side Junior High School; bids until Sept. 12; Ben Campbell, Mayor; E. E. Sands, City Engr.

Tex., Houston.—City will construct concrete sidewalks, driveways and curbs upon grounds of South Side Junior High School; bids until Sept. 12; Ben Campbell, Mayor.

Tex., Houston.—Harris county will grade and pave Post Oak Rd.; bids until Sept. 21; H. L. Washburn, County Auditor. (See Machinery Wanted.)

Tex., Kaufman.—City will pave public square. Address The Mayor.

Tex., Lufkin.—City voted \$40,000 bonds to improve streets; C. N. Humason, Mayor. (Lately noted.)

Tex., Magnolia Park, P. O. Houston.—City votes in Oct. on street-improvement bonds. Address The Mayor.

Tex., Marble Falls.—City defeated bonds for street improvements; R. E. Johnson, Mayor. (Lately noted.)

Tex., Mineral Wells.—City let contract General Construction Co. of Fort Worth to pave Oak St. with asphalt, Bert Hahn Construction Co. of Dallas to pave Mesquite St. with asphalt, and Whitley Construction Co. of Hillsboro to pave residential streets. (Previously noted.)

Tex., Temple.—Bell County Comms., Belton, Tex., will gravel 20 or 25 mi. streets and construct curbs in Temple; amount available for graveling (exclusive of curbs), \$140,000; E. A. Kingsley, Engr., Temple. (Lately noted to receive bids until Sept. 17.)

Va., Bland.—Bland County Comms. will construct road to connect with road to be constructed by Mercer County Comms., Princeton, W. Va., from Bluefield to top of East River Mountain at Abshire's Gap.

Va., Radford.—Wm. Ingles, acting for C. A. Snow, will make survey and specifications for road from Radford to Floyd.

Va., Richmond.—City appropriated \$100,000 for road improvements within 10-mi. distance from corporate limits of city. Chas. E. Bolling, City Engr.

Va., Wytheville.—Wythe County Comms. appropriated \$2500 to extend McAdam road near Laswell and \$1342.50 to change road north of Crockett's Depot; also appropriated equal to one-half cost to build section of McAdam road south of Rural Retreat to meet like amount from citizens of county.

W. Va., Bluefield.—Bluefield Colored Institute will construct cement walks; invites bids. (See Machinery Wanted.)

W. Va., Bluefield.—City let contract R. F. Baker to macadamize Chestnut St. from Bluefield to Carolina Ave. and Highland Ave. from Walnut to Chestnut St.

W. Va., Charleston.—City will curb and pave 29 streets; about 40,400 ft. curb and 68,300 sq. yds. paving; G. S. Brown, Loewenstein Bldg. City Engr.; bids until Sept. 24 at office Board of Affairs, J. F. Bedell, Pres. (See Machinery Wanted.)

W. Va., New Cumberland.—City will construct 3 mi. brick paving estimated to cost \$30,000; bids received until Sept. 15; reported to receive bids until Oct. 1 for 2 mi. brick road with stone or cement curb, estimated to cost \$22,000; A. S. Cooper, Clerk.

W. Va., Princeton.—Mercer County Commissioners will construct macadam road from Bluefield to top of East River Mountain at Abshire's Gap; Bland county, Virginia to build road connecting with Bluefield road.

### SEWER CONSTRUCTION

Ark., Argenta.—Gass & Horton of Houston, Tex., are lowest bidders at \$275,244.50 to construct storm and sanitary sewer system in Sewer Improvement Dist. No. 1; 17 mi. tile sewers and 3 mi. reinforced concrete sewers; Engrs., Lund & Hill of Little Rock. (Call for bids lately noted.)

Fla., Miami.—City will construct 18 mi. sanitary sewers, 8 to 24 in. in diam.; bids until Oct. 15; B. H. Klyce, Engr., 52 Real Estate Bldg., Miami. (See Machinery Wanted.)

Fla., New Smyrna.—City will vote in Jan. on \$16,000 bonds for sewer system; J. B. McCrary Co., Atlanta, Ga., made survey preparatory to preparing plans and specifications. (Noted in Aug.)

Fla., Tarpon Springs.—City let contract J. B. McCrary Co., Atlanta, Ga., for sewer construction costing \$15,000; voted bonds. (Noted in Feb.)

Ga., Hapeville.—City voted \$14,000 bonds to construct sewer system; Jno. D. Humphries, Mayor. (Lately noted.)

Ga., Lafayette.—City will vote on about \$17,000 bonds to construct sewer system. Address The Mayor.

Ga., Louisville.—City, J. H. Polhill, Clerk, receives bids to construct sanitary sewer system and extend present water-works; W. Hopson Goodloe, Consult. Engr., 302 American National Bank Bldg., Macon; lately noted as voting \$12,000 bonds for sewer and water systems. (See Machinery Wanted.)

Ky., Louisville.—City will let contract about Oct. 1 to construct 1000 ft. 24 and 18 in. pipe sewer, 8 ft. deep, and 1500 ft. 39, 33 and 30-in. concrete sewer 10 ft. deep; David R. Lyman, City Engr.

La., New Orleans.—City invites bids until Nov. 4 for sewer extensions, water extensions, connections to sewers and connections to water mains; Geo. G. Earl, Gen. Supt. (See Machinery Wanted.)

S. C., Columbia.—City let contract Dysard Construction Co. at \$1385 to construct 5744 ft. 8 to 12-in. sewer; also let contract to furnish pipe and castings; F. C. Wyse, Engr.-Supt. (Call for bids lately noted.)

Tenn., Nashville.—City will construct trunk sewer from and connecting with 21st ward trunk sewer near 27th Ave. to Blakemore Ave.; bids until Sept. 15; H. E. Howse, Mayor.

Tex., Granger.—City will construct sanitary sewer system; plans obtained from Ehlers Engineering Co., La Grange, Tex.; J. M. Schramm, Chrmn. Sewer Committee. (See Machinery Wanted.)

Tex., Houston.—City votes Oct. 28 on \$1,000,000 bonds for sanitary sewage disposal plants with necessary laterals, connections, mains, etc., and \$1,000,000 bonds for storm drainage; E. E. Sands, City Engr. (Lately noted.)

Tex., Houston.—City let contract Horton & Horton of Houston at \$3500 to construct storm sewer on Oriene St. from Harrisburg Rd. to German St.; initial appropriation \$5500.

Tex., Houston.—City will construct sanitary sewers upon McKee St. from Harrington to Burnett St.; bids opened Sept. 11; Ben Campbell, Mayor; E. E. Sands, City Engr.

Tex., Laredo.—City let contract to A. Dauts & Bro., Laredo, to construct 24 and 30-in. storm sewers; cost \$24,000; E. J. Foster, Engr. in charge. (Lately noted.)

Tex., San Antonio.—City, Fred Fries, Clk., will construct sanitary sewers, sections 24, 25, 26 and 27, about 61,650 ft.; bids extended until Oct. 5. (See Machinery Wanted.)

Tex., San Antonio.—City rejected bids totaling about \$66,000 to construct sewers under streets to be paved and invites new bids until Sept. 21; about 30,000 lin. ft. 8-in., 1800 lin. ft. 12-in., 2400 lin. ft. 18-in. and 2610 lin. ft. 20-in. sewers; extended date of opening bids to construct \$200,000 western outfall sewer from Sept. 21 to Oct. 5; Fred Fries, City Clerk. (Call for bids lately noted.)

Va., National Soldiers' Home.—National Home Disabled Veteran Soldiers will construct sewage purification plant; treasurer receives bids until Sept. 21.

W. Va., Charleston.—Board of Affairs let contract Jas. Ferry & Sons, Pittsburgh, Pa., and Baltimore, Md., to construct Sections 1, 2 and 4 of sewer system; cost \$110,000; to C. M. Scanlon Construction Co. of Huntington, W. Va., at \$27,300 for Section 3; about 9 mi. sewers ranging from 72 to 8 in. in diam., with manholes, catch-basins, etc. (Call for bids lately noted.)



## TELEPHONE SYSTEMS

N. C. Wilson.—Coraline Telephone & Telephone Co. will expend \$15,000 to place wires in cables; about 25,000 ft.

Tex., Sam Fordyce.—Starr Telephone Co., capital stock \$5000, inceptd. by John Thaison, Pilar Hinojosa and Albino Hinojosa.

## TEXTILE MILLS

Ala., Alexandria City.—Cotton Yarn.—Bettie Francis Cotton Mills will construct 100x80-ft. main building and 55x55-ft. warehouse; install 8000 spindles and accompanying machinery for weekly capacity 20,000 lbs. yarn; Benj. Russell, Prest. (Reported organized, etc., last April.)

Ala., Gadsden.—Hosiery.—Smith-Echols-Burnett Hardware Co. is reported interested in plan to establish hosiery knitting mill.

Ala., Girard.—Cotton Duck.—Girard Cotton Mill will install 200 automatic looms; has awarded contract; controlled by Eagle and Phenix Mills, Columbus, Ga.

N. C., Valdese.—Hosiery.—Waldenstein Hosiery Mill, capital \$125,000, inceptd. by Francis Garrou, Albert Garrou, F. Perrou and others.

Tex., Fort Worth.—Cotton Goods.—Chamber of Commerce formulating plan to organize company to build cotton mill.

Tex., Mexia.—Cotton Goods.—Commercial Club plans organization company to build cotton mill.

## WATER-POWER DEVELOPMENTS

Ala., Florence.—Allentown Power Co., capital stock \$200,000, inceptd. to develop water-power on Cypress Creek; build 2 hydro-electric power plants, beautify surrounding hills, which will front on 2 lakes to be formed by dams erected for water-power, subdivide land and build summer homes, etc.; one lake 2 mi. long and other 5 mi.; N. F. Thompson, Pres., Birmingham; T. W. Pratt, V.-P., Huntsville; Thurston H. Allen, Secy.-Treas., Florence. (Lately noted.)

Ala., Verbena.—Chilton Mining & Mfg. Co. is reported to construct dam across Mountain Creek for hydro-electric development.

La., New Orleans.—New Orleans capitalists plan organization company with \$10,000,000 capital to build hydro-electric plant about 50 mi. from New Orleans; propose to bid for city lighting contract, and if secured to expend \$8,000,000 on erection of plant and equipment of lighting system. Martin Behrman, Mayor.

N. C., Murphy.—Carolina-Tennessee Power Co., 115 Broadway, New York, is reported as having engineers testing for dam sites for water-power development on Hiwassee River, expecting soon to begin construction; report states present plans involve construction of main dam 180 feet high, developing 70,000 H. P.; proposes transmitting electricity to Murphy and other North Carolina cities, Ducktown, Tenn., 12 miles distant, etc.; capital stock \$5,000,000 and bonds \$5,000,000. (Previously reported organized, planning 50,000 to 60,000 H. P. development, etc.)

N. C., Winton.—J. W. Smith plans development additional water-power in Eastern North Carolina, \$6000 to be expended; now has \$10,000 water-power plant.

Tex., Marble Falls.—City defeated bonds to construct dam across Colorado River to supply water and power; R. E. Johnson, Mayor. (Lately noted.)

## WATER-WORKS

Ala., Georgiana.—City voted bonds to construct water-works. Address The Mayor.

Ark., Arkadelphia.—Arkansas Power Co. will install pumps and filtering plant at water-works. (See Electric Plants.)

Fla., Macclenney.—City had surveys made by J. B. McCrary Co., Atlanta, Ga., for water-works; cost \$17,000; plans, estimates and details not yet submitted. (Lately noted.)

Fla., New Smyrna.—City will vote in Jan. on about \$40,000 bonds to construct water-works; J. B. McCrary Co. of Atlanta, Ga., made survey preparatory to preparing plans and specifications. (Noted in Aug.)

Fla., Tarpon Springs.—City let contract J. B. McCrary Co., Atlanta, Ga., for water-works costing \$15,000—\$9000 for main and \$6000 for equipment; voted bonds. (Noted in Feb.)

Ga., Hapeville.—City voted \$29,000 bonds to construct water-works; Jno. D. Humphries, Mayor. (Lately noted.)

Ga., Knoxville.—City is reported to have let contract Commercial Construction Co., Kansas City, Mo., to install water-works costing \$30,000.

Ga., Louisville.—City, J. H. Polhill, Clerk, receives bids to extend present water-works and construct sanitary sewer system; W. Hopson Goodloe Const. Engr., 302 American National Bank Bldg., Macon; lately noted as voting \$12,000 bonds for water-works and sewer system. (See Machinery Wanted.)

Ky., Louisville.—Louisville Water Co. will build storage-house; 3 stories; concrete and brick; 90x51 ft.; cost about \$35,000.

La., New Orleans.—City invites bids until Nov. 4 for water extensions, sewer extensions, connections to sewers and connections to water mains; Geo. G. Earl, Gen. Supt. (See Machinery Wanted.)

Md., Myersville.—Town has made no definite plans to construct water-works; address Town Clk. (Lately noted as having \$3000 bonds available.)

Mo., Kirksville.—City let contracts in connection with enlargement of water-works: Heine Safety Boiler Co. of St. Louis at \$2320 to furnish boiler, Worthington Pump Co. of St. Louis at \$5475 for pump, and Hansen & Baum of Kirksville Plumbing Co., Kirksville, at about \$5000 for mains, hydrants, etc. (Lately noted to have sold \$25,000 bonds for water-works improvements.)

Mo., Verona.—Lawrence County Water, Light & Cold Storage Co., Aurora, Mo., is constructing reservoir; capacity 1,500,000 gals.; concrete lining; sloping walls, material practically purchased; cost \$7000; Engr., W. S. Merkle, 1005 New Bank of Commerce Bldg., St. Louis. (Previously reported.)

N. C., Newbern.—City will install boiler-fed pump and Goulds No. 5 type belt-driven rotary with capacity of 600 to 750 gals. per minute against 100 lbs. working pressure; bids until Sept. 19; F. T. Patterson, City Clerk. (See Machinery Wanted.)

Okla., Okemah.—City issued \$25,000 bonds to install additional water-works equipment. Address The Mayor.

Tex., Brownsville.—City voted Sept. 10 on \$30,000 bonds to construct water-works. Address The Mayor.

Tex., Lufkin.—City voted \$25,000 bonds for water-works extension and filtering plant. C. N. Humason, Mayor. (Lately noted.)

Tex., Magnolia Park, P. O. at Houston.—City will vote about Oct. 1 on bonds to construct water-works; 10, 8, 6 and 4-in. pipe in trenches 3 ft. deep; three 8-in. wells about 700 ft. deep; 200,000-gal. reservoir; pumping station, etc.; estimated cost, \$150,000; let contracts about Oct. 15; W. J. McKenzie, Mayor. (Lately noted.)

Tex., Marble Falls.—City defeated bonds for water-works; R. E. Johnson, Mayor. (Lately noted.)

Tex., Polytechnic.—City will lay 10,000 ft. 4 and 6-in. cast-iron water mains; bids for furnishing pipe, 35 fire hydrants, etc., received until Sept. 15; W. H. Brown, City Secy.

Tex., Robstown.—City will expend \$19,000 to construct water-works; J. L. Jacoby, Mayor. (Lately noted to have voted bonds.)

Tex., San Antonio.—San Antonio Water Supply Co. has plans and specifications about completed for pumphouse, boiler-house, coal bin, oil tank and excavation; invites contractors for heavy concrete work to communicate with R. J. Harding, V.-P. and Gen. Mgr. of company.

Tex., Wills Point.—City will lay about 7000 ft. 8-in. water pipe and 150 ft. 10-in. pipe; A. B. Dawson, City Secy., receives bids until Sept. 16; H. Gilchrist, Mayor. (Further facts lately noted.)

Va., Lynchburg.—Harry L. Shaner, City Engr., will make surveys for installation of aerating plant for city water at gravity water dam on Pedlar River.

Va., Marion.—City defeated \$20,000 water-works bonds; W. E. Francis, Chrmn. Committee. (Lately noted.)

Va., Phoebus.—Buck Roe Water Co., capital stock \$10,000, inceptd.; Geo. C. Congdon, Prest.; L. J. Cohen, Secy.-Treas.

Va., Shawsville.—Shawsville Water Co., capital stock \$10,000, inceptd.; J. L. Vaughan, Prest.; S. C. Snead, Secy.; let contract Vaughan Construction Co., Roanoke, to construct water-works; concrete reservoir; gravity supply; cost \$10,000; no equipment required.

W. Va., Beckley.—Beckley Utilities Co., Jas. Imboden, Engr., Charleston, W. Va., plans to construct water-works; amount to be expended, \$60,000; no details determined. (Lately noted.)

W. Va., Huntington.—City votes Sept. 19 on \$500,000 bonds to construct water-works; Floyd S. Chapman, Mayor.

W. Va., Kimball.—Kimball Light & Water Co. will petition City Council for franchise

to construct and operate water-works, electric-light system, etc.

## WOODWORKING PLANTS

Ala., Tuscaloosa.—Cooperage.—Tuscaloosa Cooperage Co., C. B. Turner, Jr., Mgr., will rebuild plant lately noted burned; let contract to erect mill; purchased machinery; estimated cost, \$15,000.

Fla., Perrine.—Crates.—S. S. Craw of Graysville, Tenn., is reported to establish crate factory at Perrine or Peters with daily capacity 1000 crates.

Miss., Shubuta.—Woodwork.—F. M. Spinks will install woodworking plants in connection with ice plant. (See Machinery Wanted.)

N. C., Asheville.—Wood Articles.—John T. Walker, Knoxville, Tenn., is reported contemplating building plant to mfr. wooden articles; estimated cost, \$25,000.

S. C., Sumter.—Cooperage.—Sumter Cooperage Co., capital \$40,000, inceptd.; O. D. Cleveland, Prest.; H. J. McLaurin, V.-P.; Geo. J. Bassing, Secy.-Treas.

Tenn., Manchester.—Cooperage.—Manchester Cooperage Co. increased capital stock from \$1500 to \$5000.

## FIRE DAMAGE

Ala., Ethelsville.—Moore Bros.' lumber plant; estimated loss, \$10,000.

Ala., Ensley.—Miles Memorial College dormitory at Vinesville; loss \$25,000.

Ala., Greensboro.—Dr. R. H. Cobbs' residence.

Ala., Pratt City.—P. Perollo's warehouse.

Ala., Selma.—Gilman Bldg., occupied by Pollard Mercantile Co. and others; loss \$20,000.

Ark., Ashdown.—Grand Theater, owned by J. T. Cowling; loss \$5000.

Ark., Batesville.—Residence of Paxton Thomas, Cash. Citizens' Bank & Trust Co. Ark., Dermott.—Porter Bros. & Kilpatrick's Bldg.; loss \$3000.

Ark., Fort Smith.—Fort Smith Crushed Stone Co.'s plant; estimated loss \$15,000.

Ark., Jonesboro.—Arthur Thompson's residence at 516 Cate Ave.; loss \$3000.

Ark., Newark.—Masonic Lodge, loss \$9000; Adams Bros. Co.'s building, loss \$4,000.

Ark., Warren.—G. R. Blankenship's cotton gin; loss \$5000.

Fla., Gainesville.—Whidden House at Orange and Pleasant Sts.

Fla., Jacksonville.—L. B. Williams' residence at Stockton and Irene Sts.; loss \$3000.

Ga., Americus.—T. J. Morgan's gin.

Ga., Brinson.—J. C. & M. M. Mock's store; Mrs. Ida Mock's residence.

Ga., Shackleton, R. F. D. from Gore.—Residences of Wm. Anderson, Roy Dunwoody, Tom Wells and others.

Ga., Thomasville.—"Bay Brook" residence of Mr. Theroux.

Ky., Louisville.—Kentucky Rim & Shaft Co.'s rim warehouse; loss \$5000.

Ky., Louisville.—C. C. Seaton's residence at Mockingbird owned by Mrs. E. R. Schmitt; loss \$5000.

Ky., Louisville.—Forman-Breen Mfg. Co.'s harness factory at 1120-1122 Rowan St., estimated loss \$50,000, the F. E. Reeser Shoe Mfg. Co. owning the building, estimated loss \$3000.

Ky., Paris.—Stivers Lumber Co.'s plant;

Flora Lumber Co.'s plant on S. Main St.; estimated loss \$20,000.

Ky., Nicholas.—Hotel Nicholas, owned by Dixie Knight; loss \$26,000.

Md., Baltimore.—Gordon P. Paine's residence at 813 University Parkway; loss \$3500.

Md., Cumberland.—United States Mattress Co.'s plant.

Miss., Lexington.—"Terrystone," residence occupied by J. D. Weeks and Dr. McCauley and owned by Central Baptist Assn.

Miss., McHenry.—J. S. Atkinson's store; loss, including stock, \$25,000.

Miss., Pascagoula.—Scranton Shingle Co.'s plant; loss \$7000.

Miss., Summit.—Hollis G. Dunn's residence; loss \$3000.

N. C., Wilson.—W. L. Russell Shook & Lumber Co.'s plant and about 2,000,000 ft. lumber; estimated loss, \$100,000.

S. C., Charleston.—Store and residence in Christ Church parish occupied by H. Lamb and owned by H. T. Foster.

S. C., Darlington.—Manne Building; loss several thousand dollars.

S. C., Greenville.—Dr. S. C. Dendy's residence; W. C. Pressure's residence, owned by Melrose Land Co.; loss \$4000.

S. C., Martin.—Miss Essie Clinkscales' residence.

S. C., Rock Hill.—Hutchison Bldg., occupied by Johnson Power Drug Co.; loss \$16,000.

Tenn., Alamo.—Two buildings owned by R. L. Thompson and occupied by Edwards-McClanahan-Randolph and Dearie Cafe.

Tenn., Lookout Mountain.—Dwelling occupied by M. T. Davis and owned by Jesse M. Littleton, Chattanooga; loss \$3000.

Tenn., Memphis.—Mrs. Thos. Fluckey's residence at 264 Simpson Ave.; loss \$4000.

Tenn., Nashville.—Mrs. Lex Rascoe's residence and adjoining residence; loss \$5000.

Tenn., New Providence.—John Roe's store; J. T. Pruitt's store; R. L. Higgins' store and tobacco factory.

Tex., Anahuac.—Anahuac Ice Plant and Cotton Gin; estimated loss \$3000.

Tex., Fort Worth.—R. B. Henry's residence at 1318 Moreland Ave.; loss \$4000.

Tex., Gatesville.—Barn at State Training School for Boys; loss \$8000; David R. Hall, Chrmn. Board of Trustees.

Tex., Holland.—N. G. Moore's residence; loss \$4000.

Tex., Lamarque.—A. L. Bogato's store, residence and feed storage shed; loss about \$6000.

Tex., Olla.—Russ Daniel Lumber Co.'s sawmill; loss \$1200.

Tex., San Antonio.—W. H. Hume's residence on Los Angeles St., Alamo Heights.

Tex., San Benito.—San Benito Ice & Cold Storage Co.'s ice plant, loss \$54,000; San Benito Canning Factory, loss \$7000.

Tex., Temple.—Stable leased to W. L. Gee; loss \$3000.

Va., Fork Union.—Dr. T. J. Wright's residence; loss \$3000.

Va., Martinsville.—Southerland Bldg., occupied by Townes Drug Co.

W. Va., Martinsburg.—Universal Mfg. Co.'s plant in Auburndale; loss \$12,500.

Va., Martinsville.—Townes Drug Co. in Southerland Bldg.

W. Va., Parkersburg.—People's Livery & Transfer Stable at 316 4th St., operated by Roscoe Caskey; loss several thousand dollars.

## BUILDING NEWS

## BUILDINGS PROPOSED

## APARTMENT-HOUSES

Ala., Mobile.—John Craft will erect 2-story apartment-house on Jackson St.; cost \$7000.

D. C., Washington.—A. F. Fox Co. has plans by Spelden & Spelden, 1403 New York Ave. N. W., Washington, for apartment-house at 18th St. and Pennsylvania Ave.

Fla., Miami.—W. D. Newsome has plans by E. A. Nolan, Miami, for apartment-house; 3 stories; frame; 12 suites; completion by Jan. 1; cost \$15,000.

Ga., Atlanta.—Mrs. G. J. Dallas will erect frame apartment-house at 250 Ashby St.; day labor; cost \$3000.

Ky., Bowling Green.—Dr. Tibbis Carpenter and Emory G. Dent will erect 2-story apartment-house on State St.; cost \$6000.

Md., Annapolis.—Philip Miller will erect apartment and store building; 42x90 ft.; ordinary construction; slag roof; low-pressure steam heat; electric lighting; Louis Levi, Archt., Real Estate Trust Bldg., Philadelphia; bids opened Sept. 14. (Lately noted.)

N. C., Greensboro.—R. C. Hood has plans by Raleigh James Hughes, Greensboro, for apartment-house; 3 stories and basement; fireproof; cost (without mechanical equipment) \$25,000; bids at office of architect until Sept. 19.

Va., Richmond.—R. S. Wolfe, 21-23 Arcade Market, Washington, D. C., will erect apartment-house at 719 E. Grace St.

W. Va., Wheeling.—Louis Schwalb has plans by Ed. Franzheim, Wheeling, for

apartment-house at 715 Main St.; 3 stories; 18 rooms; electric lights.

### ASSOCIATION AND FRATERNAL

Ark., Malvern.—Rockport Lodge No. 58, A. F. and A. M., postponed erection of building for the present. (Lately noted.)

Fla., Key West.—Knights of Pythias will probably erect castle hall.

Miss., Hattiesburg.—Y. M. C. A. is reported to receive new bids to erect building; cost \$50,000; previous bids rejected; R. H. Hunt, Archt., Chattanooga, Tenn. (Noted in May.)

N. C., Wilmington.—Y. W. C. A. is reported to have deferred erection of gymnasium addition. (Lately noted.)

W. Va., Matoaka.—Knights of Pythias, E. A. Buchanan, Secy., opens bids Sept. 19 to erect store and lodge building; 32x54 ft.; 3 stories and basement; semi-fireproof; built-up roof; hot-water heat; electric lighting; cost \$10,000; A. F. Wysong, Archt., Princeton.

### BANK AND OFFICE

Ark., DeWitt.—First National Bank will erect building; 25x75 ft.; ordinary construction; gravel roof; Chas. L. Thompson, Archt., Little Rock; bids opened Sept. 15. (Lately noted.)

Fla., Key West.—Peninsular Casualty Co., O. S. Long, Local Mgr., is reported to erect office building; 5 or 6 stories.

Ga., Atlanta.—Reuben Arnold and Harvey Hill will probably open bids early in 1915 to erect office building; 8 stories; 52x120 ft.; fireproof; high-speed traction elevator; vapor heat; Walker & Chase, Archts., Candler Bldg., Atlanta. (Previously noted to cost (without mechanical equipment) \$120,000.)

La., Longstreet.—Longstreet State Bank has plans by J. D. Pridgen, Joaquin, Tex., for bank building; 20x35 ft.; ordinary construction; paper composition roof; gas lighting; cost \$1750.

N. C., Lincolnton.—First National Bank will erect building; details not determined.

S. C., Greenville.—Southeastern Life Insurance Co. is having plans prepared by J. E. Sirrine, Greenville for office building; 41 ft. 7 in. by 100 ft.; fireproof; tile roof; heating not determined; cost \$25,000. Address proposals to architect. (Lately noted.)

W. Va., Charleston.—Charleston Electric Supply Co. opens bids Sept. 25 to erect office and store building; 4 stories; 40x135 ft.; reinforced concrete frame; brick exterior; Jas. L. Montgomery, Archt., Coyle & Richardson Bldg., Charleston; plans complete Sept. 15. (Lately noted.)

W. Va., Wheeling.—Peoples Bank of Wheeling is having plans prepared by Edw. Bates Franzheim, Schmulbach Bldg., Wheeling, to remodel 4-story brick and terra-cotta bank building at 12th and Main Sts.; cost \$50,000.

### CHURCHES

Ala., Montgomery.—Baptist Church, Rev. D. Z. Wooley, pastor, has plans by Mr. Dirmeyer for building in Chisholm; bungalow style; 40-ft. steeple in front; main auditorium to seat 300; Sunday-school rooms; cost \$3000.

Ark., Jonesboro.—First Baptist Church is erecting building; C. W. Bulger & Son, Archts., Dallas, Tex.; day labor; lately noted. (See Machinery Wanted.)

Fla., Sanford.—First Presbyterian Church postponed indefinitely erection of building; C. F. Streeter, Archt., Jacksonville, Fla. (Lately noted.)

La., Lake Charles.—Hi-Mount Baptist Church, Rev. L. M. Nelson, pastor, will erect building.

Md., Lonaconing.—Baptist Church, Rev. J. P. Filson, Chrmn. Bldg., Com., will receive bids to erect building; plans and specifications on application.

Miss., Pontotoc.—Baptist church, C. E. Franklin, Secy. Building Com., engaged H. P. Chastong, Pontotoc, as foreman of construction for building; 90x90 ft.; 3 stories; ordinary construction; tile roof; cost \$20,000; J. E. Greene, Archt., Birmingham; lately noted. (See Machinery Wanted.)

Mo., St. Louis.—First Congregational Church, Rev. Horace F. Holton, pastor, 3510 Delmar Blvd., will erect \$25,000 chapel to be replaced later with \$100,000 church building at University lane and Wydown Blvd.

N. C., Chimney Rock.—Piedmont Baptist Church will erect building. Address The Pastor.

N. C., Durham.—Lakewood Baptist Church, Rev. W. E. Warren, pastor, will erect frame building; cost \$3000.

Tex., Fort Worth.—First Congregational Church will improve building; install steam heating plant, lighting system, repair steps, stucco work, etc.; C. E. Nash, Chrmn. Bldg. Com.

Tex., Austin.—East Ave. Baptist Church will probably let contract in Oct. to erect building; 86x56 ft.; electric lighting; steam heat; cost \$20,000; C. W. Bulger & Son, Archts., Dallas. (Lately noted.)

Va., Richmond.—Denny Street M. E. Church will expend \$10,000 to improve building. Address The Pastor.

W. Va., Elkhorn.—Earle V. Garrett, Archt., Pocahontas, Va., will receive bids to rebuild frame structure for St. Mark's Greek Catholic Church; plans and specifications on file until Sept. 18.

### CITY AND COUNTY

Ala., Gadsden.—Hospital.—Etowah county votes Nov. 3 on \$25,000 bonds to erect city hospital. Address County Commrs.

Fla., New Smyrna.—City Hall and Fire Station.—City is having plans prepared for fire station and city hall; 30x45 ft.; brick; 2 stories; lower floor for fire apparatus; second floor for council chamber, Mayor's court-room, etc.

Fla., Starke.—Jail.—Town will erect jail; C. Futch, Town Clk.; bids received until Sept. 11.

Ga., Chatsworth.—Jail.—Murray county will levy tax to erect jail; cost \$12,000. Address County Commrs., Spring Place, Ga.

Ky., Louisville.—Stables.—Bids received by Board of Public Works, Roger G. McGrath, Secy., until Sept. 17 to restore burnt and damaged portions of city stables on Jefferson St. between 8th and 9th Sts.; plans and specifications at office of Board and Joseph & Joseph, Archts., Great Southern Bldg., Louisville.

N. C., Wilmington.—Fire Station.—Bids received until Sept. 15 to erect fire station at Fifth and Castle Sts.; plans and specifications at office of Jas. F. Gause, Jr., Archt., Room No. 30 I. O. O. F. Bldg., Wilmington, call for structure 28x57 ft.; brick; slate roof; electric lights; cost \$5500. (Lately noted.)

Okl., Tulsa.—County Farm.—Tulsa County Commrs. are reported considering \$10,000 bond issue for improvements at county farm.

Tenn., Columbia.—Jailers' Residence.—Maury County Commrs. receive bids until Sept. 17 to erect residence for sheriff and jailer; cost \$8000.

Tex., Hillsboro.—Courthouse and Jail.—Hill County Commrs. plan to remodel courthouse and jail.

Tex., Lufkin.—Fire Department.—City voted \$10,000 bonds for improvements to fire department; will erect station No. 2 and purchase fire apparatus; C. N. Humason, Mayor. (Lately noted.)

W. Va., Huntington.—City Hall, Fire Equipment, etc.—City votes Sept. 19 on \$125,000 bonds to complete city hall, \$30,000 bonds to purchase and install additional fire equipment and fire-fighting apparatus, \$10,000 to erect market, etc.; Floyd S. Chapman, Mayor. (Lately noted.)

W. Va., Parkersburg.—Infirmary.—Wood County Commrs. have plans by Theo. T. Sansbury, Jr., Parkersburg, for infirmary.

### COURTHOUSES

Fla., Fort Myers.—Lee County Commrs. receive bids until Sept. 26 to erect courthouse; plans and specifications at office of H. A. Hendry, Clk., Fort Myers, and F. J. Kennard, Archt., Tampa, Fla. (Contract lately noted let, but this not to be executed.)

Ky., Cythiana.—Harrison County Court, J. S. Baskett, Probate Judge, Boyd, Ky., will expend \$12,000 to erect addition to courthouse; 2 wings; ordinary construction; brick; tin roof; 2 heating plants to cost \$2500; electric lighting; John T. Gilly, Archt., Cythiana. (Lately noted to receive bids until Oct. 5.)

Okl., McAlester.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, opened bids to install elevator. (See Government and State.)

Tex., Hillsboro.—Hill County Commrs. plan to remodel courthouse and jail.

### DWELLINGS

Ala., Mobile.—Mrs. Margaret Hickey will erect 2 two-story cottages at Augusta and Conception Sts.; cost \$3000.

Fla., Jacksonville.—W. J. Armour will erect 4 one-story frame dwellings on Bridler St.; cost \$2800.

Fla., Orlando.—R. D. Waring, Kissimmee, Fla., will erect number of residences.

Fla., Pensacola.—Walter B. Colvin has plans by Alfred & Alfred, P. O. Box 271, Pensacola, for bungalow; frame; Vulvanite asphalt shingle roof; Texas wall plaster; gas and electric fixtures.

Fla., Tampa.—W. H. Beckwith will erect dwelling on Bayshore Blvd.; 2 stories; cost about \$20,000; construction under supervision of J. H. Detwiler.

Ga., Savannah.—W. C. Lawson, Prest. Consolidated Tramway Co., Roanoke, Va., will erect residence at 35th and Drayton Sts.

Ga., Savannah.—Fred G. Bradley, Supt. of American Agricultural Chemical Co., plans to erect residence at Estil Ave. and Paulsen St.

Ky., Louisville.—J. H. Weinreich will erect brick-veneer dwelling at 1759 Swartz Ave.; cost \$3000.

Ky., Louisville.—Katherine Hanrahan will erect brick dwelling at 1228 S. 6th St.; cost \$3500.

Md., Baltimore.—Saml. Bersterman, 36 N. Potomac St., is reported to erect 2 blocks of dwellings on 7th St. between Franklin St. and Edmondson Ave.; 2 stories; brick; frontage 15 ft.

Md., Baltimore.—Carl F. New, American Bldg., is having plans prepared by Walter M. Gieske, Gunther Bldg., Baltimore, for residence on Ridgewood Ave., West Arlington; 2½ stories; frame and stucco; shingle roof; hot-water heat; electric lights; cost about \$3500.

Md., Baltimore.—Rufus Woods, Equitable Bldg., has plans by Henry J. Tinley, 312 N. Charles St., Baltimore, for 4 residences on 23d St. near Guilford Ave.; 2 stories; brick.

Md., Baltimore.—Rt. Rev. John Gardner Murray has plans by Wm. H. Glidden, Md. Casualty Tower Bldg., Baltimore, for alterations and additions to residence at Charles St. Ave. and 37th St.; contractors estimating are J. F. Kunkel, 29 S. Linwood Ave.; Saml. Sprent, 203 N. Pine St.; Gladfelter & Chambers, 204 Woodberry Ave.; H. H. MacLellan, 15 E. Fayette St.; Charles L. Stockhausen Co., Inc., Marine Natl. Bank Bldg., all of Baltimore.

Mo., St. Louis.—J. W. Evans will erect bungalow.

Tenn., Columbia.—Maury County Commrs. receive bids until Sept. 17 to erect residence for sheriff and jailer; cost \$8000.

Tenn., Knoxville.—W. R. Taylor will erect double 2-story residence on Lombard St.; cost \$2900.

Tenn., Nashville.—H. L. Parman will erect 2 frame bungalows on Shelby St., near 10th St.; cost \$3500.

Tex., Austin.—Swedish Lutheran Church, Rev. Gideon C. Olson, pastor, will erect parsonage.

Tex., Bonham.—Chas. Halsell will erect 2-story brick residence on E. 9th St.; plans in progress.

Tex., El Paso.—John W. Hull will erect brick bungalow and garage in Franklin Heights; cost \$4600.

Tex., Fort Worth.—LeRoy Smith will erect \$9000 residence at 920 Penn St.

Tex., Fredericksburg.—Otto Burgdorf is erecting cottage.

Tex., San Antonio.—Matilda Shoop will erect 2-story dwelling on Dawson St.; cost \$3500.

Va., Norfolk.—W. H. Garrett will expend \$4200 to erect dwelling at Stockley Gardens, near Baldwin Pl.; brick; slate roof; hot-water heat; electric lighting; bids opened Sept. 7. (Lately noted.)

Va., Richmond.—Mrs. Elizabeth Gordon will erect 2-story frame dwelling on Decatur St.; cost \$3300.

Va., Roanoke.—Jos. Grosso will erect frame store and dwelling on 13th St.; cost \$2900.

### GOVERNMENT AND STATE

Fla., Pensacola.—Laboratory.—State Board of Health, Jacksonville, opens bids Oct. 1 to erect building; 2 stories and basement; pressed brick; tile roof; galvanized iron cornice; ceramic floors; marble base; cost \$20,000; W. D. Willis, Archt., Pensacola. (Lately noted.)

Ky., Lexington.—Institution.—State Board of Control of Charitable Institutions, Frankfort, will erect additional building; cost \$20,000.

La., New Orleans.—Navy-yard.—Chief of Bureau of Yards and Docks, Navy Dept., Washington, D. C., opened bids to repair building No. 6 at navy-yard; Henry Monk, Pensacola, Fla., is lowest bidder at \$6375.

Okl., McAlester.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising

Archt., Washington, D. C., opened bids to install electric passenger elevator in post-office and courthouse; Kaestner & Hecht Co., Chicago, is lowest bidder at \$3800.

Tex., Carlsbad.—Dormitory.—Board of Commissioners for Texas State Tuberculosis Sanitarium, Carlsbad, and Ernest E. McAnelly, Archt., 1201-02 Southwestern Life Insurance Bldg., Dallas, receive bids until Oct. 1 to erect 2-story reinforced concrete dormitory; plans and specifications from above offices on application. (Previously noted.)

### HOTELS

Ala., Mobile.—Cawthorn Hotel, C. B. Hervey, Mgr., will expend several thousand dollars for improvements; provide tile floor in pool-room, etc.

Fla., Clearwater.—W. T. Harrison receives bids until Sept. 19 to erect store and hotel. (See Stores.)

Fla., Eustis.—C. E. Riddle, Jacksonville, Fla., will not at present erect hotel at Chautauqua Park. (Lately noted.)

Fla., Tampa.—Wm. LeDuc is reported to have abandoned plans to erect 8-story hotel. (Previously noted.)

Ga., Augusta.—Plaza Hotel Co. Incptd., with \$25,000 capital stock by W. T. Wilson, Jules Heymann and Sam Baron.

Ky., Danville.—C. E. Richards, Columbus, O., is reported to have prepared plans for hotel to cost \$100,000.

La., Shreveport.—Thos. C. Barrett opened bids to erect hotel at Louisiana and Crockett Sts.; W. H. Werner, Shreveport, is lowest bidder at \$68,750; plans call for 4-story structure; brick and reinforced concrete; 70 rooms. (Lately noted.)

Tex., Fredericksburg.—Louis Dietz is erecting 10-room addition to hotel on San Saba St.

### MISCELLANEOUS

Fla., Gulfport.—Casino.—Bayview Hotel Co., F. J. Davenport, Gen. Mgr., will erect amusement casino; 2 stories; 180x180 ft.; swimming-pool, 60x150 ft.; merry-go-round, etc.; cost \$30,000.

Ga., Marietta.—Parish-house.—St. James' Church has plans by A. Ten Eyck Brown, 607 Forsythe Bldg., Atlanta, Ga., for parish-house; 40x70 ft.; one story, gallery and basement; gymnasium and swimming pool in basement; ordinary construction; composition roof; low-pressure steam heat; cost \$12,000; plans ready for estimates about Sept. 19.

Ky., Louisville.—Hospital.—Red Cross Hospital will erect brick addition to hospital at 1436 S. Shelby St.; cost \$12,000.

Miss., Meridian.—Hospital.—Dr. J. H. Rush has plans by P. J. Krouse, Meridian, for hospital; 3 stories; brick veneer; tile shingle roof; steam heat; electric lighting; hand elevator; cost \$8000 to \$10,000; construction to begin about Nov. 1. (Lately noted.)

Tex., Fort Worth.—Stock Barns.—Holbert Horse Importing Co., Greeley, Iowa, is reported considering erecting stock barns; Thos. R. Holbert temporarily at Worth Hotel, Fort Worth.

Tex., Waco.—Sanitarium.—General Board of Baptist Sanitarium, Dr. A. J. Barton, Chrmn., 1313 S. 7th St., plans to erect sanitarium.

Va., Richlands.—Hospital.—Dr. W. R. Williams is reported to erect hospital.

W. Va., Huntington.—Skating Rink.—J. Broh states erection of skating rink has been deferred. (Lately noted.)

### RAILWAY STATIONS, SHEDS, ETC.

Ala., Selma.—Southern Ry., B. Herman, Chief Engr., Washington, D. C., and Atlantic Coast Line Ry. Co., E. B. Pleasants, Chief Engr., Wilmington, N. C., are reported to erect union station.

Tex., Galveston.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., will erect umbrella train sheds at Union Station.

### SCHOOLS

Ala., Inglenook (P. O. at Boyles).—Bids received by Board of Education of Inglenook, Boyles, Ala., until Sept. 15 through U. P. Clair, Clk., to erect school; plans and specifications at office of Joy-Marriott Co., Archt., Birmingham; bids received on separate or whole contracts for excavating, concrete and cement work, brick work, including cut stone and iron work, sheet metal work and roofing, carpentry including hardware and blackboards, lathing and plastering, painting and glazing, electric wiring and heating. (Lately noted.)



Ala., Spring Hill.—Spring Hill College is reported to erect additional story over gymnasium for dormitory rooms.

Ala., Tuscaloosa.—Board of Education, J. H. Foster, Supt., is reported considering erecting 4 schools.

Fla., Dunedin.—Board of Public Instruction, Dixie M. Hollis, Secy., Clearwater, Fla., lets contract about Oct. 1 to erect school; 2 stories; brick; tile roof; pine floors; heating not determined; cost \$6000; Sargent Hamilton Co., Archt., Clearwater, Fla. (Lately noted.)

Fla., Fort Lauderdale.—School Board rejected all bids to erect school; will advertise for new bids; W. C. DeGarmo, Archt., Miami, Fla. (Lately noted.)

Fla., Jacksonville.—Board of Public Instruction of Duval County will soon call election to establish School Tax Subdistrict No. 1, contemplating election later on \$1,000,000 bonds for schools and equipment. (Previously noted.)

Fla., Lake Helen.—Volusia County School Board has plans by Mark & Sheftall, 210 Clark Bldg., Jacksonville, for school; 50x120 ft.; brick; roofing not determined; cost \$12,000; plans ready in about 6 weeks. (Lately noted.)

Fla., Palatka.—City defeated \$100,000 bonds to erect schools. (Lately noted.)

Ga., Atlanta.—Gammon Theological Seminary has plans by Chas. H. Hopson, 1302 Healey Bldg., Atlanta, for rectory; brick and stone; slate roof; steam heat; electric wiring; cost \$15,000; day labor.

Ga., Lilly.—City, H. D. Royal, Mayor, defeated bonds to erect school. (Lately noted.)

Ky., Ludlow.—City votes November 3 on \$30,000 bonds to erect high school. Address The Mayor.

Ky., Louisville.—Samuel D. Jones, Business Director, Board of Education, receives bids until Oct. 1 to erect school at 42d and Herman Sts.; 2 stories; 3 wings; fireproof; dark brown tapestry brick; cut-stone finish; 8 rooms; also receiving bids for finished hardware; plans and specifications at office of J. Earl Henry, Archt. and Engr., Louisville. (Lately noted.)

Ky., Maysville.—Mason County Board of Education will erect schools at Mt. Gilead and Dickson School Dists.; bids received until Sept. 12; Jessie O. Yancey, Pres.

La., Alexandria.—Rapides Parish School Board, Jonas Rosenthal, Pres., will expend \$100,000 to erect school building; 104x163 ft.; fireproof; steam heat; electric lighting; Favrot & Livaudais, Archts., New Orleans. (Lately noted to receive bids until Oct. 1.)

Md., Cumberland.—Allegany County Commissioners receive bids through John E. Edwards, Supt. of Schools, 7 Union St., until Sept. 21 (extended date) to erect graded school; 2 stories; 64x85 ft.; fireproof; composition roof; hot-air heat; gas and electric lights; separate bids for heating and ventilating; cost \$25,000; plans and specifications at office of board as above and Holmboe & Lafferty, Archts., New York and Clarksburg, W. Va. (Lately noted.)

Md., Midland.—Allegany County School Comms., A. Taylor Smith, Pres., 7 Union St., Cumberland, Md., will expend \$10,000 to erect addition to school building; 51x44 ft.; ordinary construction; slate roof; low-pressure gravity steam heat to cost \$1800; Wm. F. Elder, Archt., Cumberland; bids opened Sept. 15; heating and plumbing contracts separate; lately noted. (See Machinery Wanted.)

Md., Hyattsville.—School Comms. opened bids to erect school; main building 67x52 ft.; wing 45x40 ft.; ordinary construction; slate and tin roof; steam heat; electric lighting; lowest bid, at \$21,990, exceeded funds available; will have plans revised, and following lowest bidders will figure: Burgess & Parsons, 700 10th St.; W. L. Turner, 41 Q St., and R. L. Jennings, 1405 I St. N. W., all of Washington; Hunter & Bell, Archts., Southern Bldg., Washington. (Lately noted.)

Miss., McLaurin.—McLaurin School Dist. voted \$10,000 bonds to erect school. Address Dist. School Trustees. (Lately noted.)

Mo., Kansas City.—I. J. Cammack, Supt. of Schools, and Gen. Milton Moore of School Board, submitted plans for school to replace Kensington School; one story; 17 rooms.

N. C., Asheville.—Buncombe County Board of Education adopted plans by T. E. Davis, Asheville, for school at Grace; 8 rooms; auditorium to seat 500; brick; metal roof; fireproof; cost \$10,000.

N. C., Black Creek.—Wilson County School Board, Wilson, N. C., is reported receiving

bids to erect school; 11 rooms and basement; cost \$4000 to \$6000.

N. C., Edenton.—Chowan County Board of Education will receive bids to erect 2 two-room schools; further information from J. O. Alderman, Edenton.

N. C., Morganton.—Burke County Board of Education, J. H. Giles, Chrmn.; T. L. Sigmon, Supt., receives bids until Oct. 1 to erect schools at Quaker Meadows township, Dist. No. 3; Lower Creek township, north of Chesterfield; specifications, etc., at office of board.

N. C., Sims.—Wilson County School Board, Wilson, N. C., is reported contemplating erection of school.

N. C., Salisbury.—City has plans by J. E. Crane, Grubb Bldg., Salisbury, for school on E. Inniss St.; 80x63 ft.; 2 stories and basement; accommodations for about 500; cost \$12,000; bids opened Sept. 28; construction to begin Oct. 1. (Lately noted.)

Okla., Oklahoma City.—Bids received until Sept. 17 by School Board Consolidated No. 1, Oklahoma County, to erect school; plans and specifications at office of Board and C. E. Hair & Co., Archts., 417 Terminal Bldg., Oklahoma City.

Okla., Stillwater.—Oklahoma Agricultural and Mechanical College, Alfred Boyd, acting dean, Engineering Dept., contemplates rebuilding Morris Hall; plans not definite. (Lately noted burned at loss of \$100,000.)

Okla., Yeager.—Yeager School Dist. No. 2 voted bonds to erect school; address Dist. School Trustees. (Lately noted considering issuing \$9000 bonds.)

S. C., St. Matthews.—School Dist. No. 8 postponed erection of school until bonds are sold; W. A. Edwards, Archt., Atlanta, Ga. (Previously noted.)

Tenn., Chattanooga.—University of Chattanooga, Dr. F. W. Hixon, Pres., is reported to erect woman's building and man's common.

Tenn., Decatur.—Meigs County School Board will erect high school; cost \$5000 to \$6000.

Tenn., Robertsville.—Anderson County Board of Public Instruction, A. C. Duggins, Supt., Clinton, Tenn., will probably let contract to W. H. Galdard & Co., Knoxville, to erect school; 6 rooms and auditorium; fireproof exterior; tile roof; steam heat; cost \$9000; J. O. Leinart, Archt., Clinton. (Lately noted.)

Tex., Houston.—City votes Oct. 28 on \$200,000 bonds for schools; E. E. Sands, City Engr.

Tex., Lyons.—J. C. Murray, Pres. Board of School Trustees, receives bids until Sept. 19 to erect 2-story brick school; plans and specifications at office of O. A. Schatz, Secy., Lyons, and Dennis R. Walsh, Archt., Austin.

Tex., Sunset Hill, P. O. at Dallas.—Sunset Hill Ind. School Dist. is reported to vote on bonds to erect schools. Address Dist. School Trustees.

Tex., Yoakum.—City, Dan T. Price, Mayor, receives bids until Oct. 8 to erect 2 schools; 2 stories and basement; brick; plans, specifications, etc., at office of J. Henry Yentzen, Archt., Yoakum. (Lately noted to cost \$27,000.)

Va., Alexandria.—Joint Com. on City Property and School receives bids until Sept. 24 to erect high school at Cameron and West Sts.; probable cost \$50,000; E. C. Dunn, City Engr.

Va., Roanoke.—School Board acquired site at 15th St. and Orange Ave. and will erect school for Melrose ward.

Va., Radford.—State Normal School, Dr. J. P. McConnell, Pres., East Radford, receives bids until Sept. 23 to erect school; cost \$35,000; Chas. M. Robinson, Inc., Archt., 508 Times-Dispatch Bldg., Richmond. (Previously noted at East Radford, Va.)

W. Va., Athens.—State Board of Control, J. S. Lakin, Pres., Charleston, receives bids until Oct. 8 to erect auditorium with basement for heating plant in connection with Concord School; also 2-story and basement right wing; reinforced concrete; fireproof; brick; plans and specifications at offices of State Board of Control and Concord Normal School; H. Rus Warne, Archt., Charleston. (Lately noted.)

W. Va., Fairmont.—State Board of Control, Charleston, W. Va., is reported considering erection of State Normal School; main building to cost \$145,000.

## STORES

Ark., Rogers.—Benton County Hardware Co., Bentonville, Ark., will erect 3-story business building.

Fla., Clearwater.—W. T. Harrison receives bids until Sept. 19 to erect building on Cleveland St.; lower floor for 6 or 8 stores; upper floor for 100 hotel rooms; plans and specifications at office of Lester Avery, Clearwater, and Bonfoey & Elliott, Tampa, Archts. (Lately noted.)

Fla., Jacksonville.—C. T. Dawkins will erect 1-story brick building on Riverside Ave.; cost \$5000.

Fla., Palatka.—W. A. Merryday & Co. will erect store building; 2 stories; 100-ft. frontage; brick.

Ga., Stillmore.—R. E. Graham will erect brick store building to replace structure lately noted burned; metal roof; cost \$3500.

La., New Orleans.—Val Merz will expend \$5000 for alterations to building at 121 St. Charles St.

Md., Annapolis.—Philip Miller has plans for store and office building lately noted. (See Apartment-houses.)

N. C., Edenton.—Branning Mfg. Co. will erect brick store building.

Tenn., Memphis.—R. B. Snowden will expend \$3000 to erect addition to building at 1337 Central Ave.

Tenn., Memphis.—Phil Pidgeon will expend \$2000 repair burned structure on Kentucky St.

Tex., Dallas.—P. P. Martinez, 1808 Main St., opens bids in two weeks to erect store and garage. (See Motors and Garages and Machinery Wanted.)

Tex., El Paso.—Ed Dreiss will expend \$5000 to repair building on Alamo Plaza.

Va., Roanoke.—Jos. Grosso will erect store and dwelling. (See Dwellings.)

Va., Roanoke.—Turner and Turner will erect 2-story brick store on Commerce St. near Campbell St.; cost \$4000.

W. Va., Beckley.—Dr. T. E. Combs will erect business building.

W. Va., Charleston.—Charleston Electric Supply Co. opens bids Sept. 25 to erect store and office building lately noted. (See Bank and Office.)

W. Va., Burlington.—R. J. Ontes will rebuild store; size not determined; date of opening bids not set. (Lately reported burned.)

## THEATERS

Ga., Thomasville.—Thompson Opera-House will erect theater to replace structure lately noted burned at loss of \$50,000.

Md., Baltimore.—Northern Amusement Co., H. W. Webb, Pres., Title Bldg., plans to erect moving-picture theater on south side North Ave., west of Charles St.

## WAREHOUSES

Ala., Hartsboro.—Davis & Taylor are reported contemplating erecting addition to warehouse; 75x100 ft.

Ark., Batesville.—R. P. Weaver plans to enlarge cotton warehouse, increasing capacity from about 2500 to 7000 bales.

Ark., Russellville.—Geo. K. Lowe, County Farm Demonstrator, is reported interested in erection of warehouse.

Fla., Palatka.—J. C. McCoy will erect 30x70-ft. warehouse; corrugated iron.

Ga., Atlanta.—George W. Parrott is reported to erect cotton warehouse with capacity of at least 4000 bales; 1 story.

Ga., Camilla.—Consolidated Mfg. Co., W. F. Cullins, Secy.-Treas., is reported considering erecting cotton warehouse; 90x100 ft.

Ga., Savannah.—United Cotton Warehouse Corporation inceptd. with \$50,000 capital stock by R. M. Butler, C. G. Bell, H. D. Stevens and others.

La., Alexandria.—W. D. Haas & Co., Albert Hardtner Co., Rapides Bank and others are promoting erection of cotton warehouse on premises of and under supervision and management of Alexandria Compress & Warehouse Co.

Mo., Kansas City.—Holabird & Roche, Monroe Bldg., Chicago, are reported preparing plans for fireproof terminal building; 10 stories.

N. C., Burgaw.—Burgaw Warehouse Co. inceptd. with \$25,000 capital stock by A. D. Ward, E. J. Saunders and others.

N. C., Clinton.—Clinton Cotton Warehouse Co. inceptd. with \$10,000 capital stock by Frank H. Holmes, H. A. Grady and others.

N. C., Kinston.—Kinston Chamber of Commerce is interested in organization of company to erect system of cotton warehouses; capacity 6000 to 10,000 bales; L. Hines, J. H. Canady, E. G. Barrett and others, Com.

N. C., Lumberton.—A. W. McLean is reported interested in erection of cotton warehouse.

N. C., Monroe.—T. J. W. Broom is Chrmn. and T. C. Collins Secy. of Com. promoting erection of cotton warehouse.

N. C., Scotland Neck.—Frank P. Shields plans to erect cotton warehouse.

N. C., Warsaw.—Chas. Hudson and E. J. Hill, of Wilson, N. C., are erecting cotton warehouse; 40x100 ft.; capacity for 450 bales.

N. C., Warsaw.—L. P. Best, H. H. Carlton and H. F. Pierce will organize company to erect bonded cotton warehouse.

Okla., Boswell.—Boswell Cotton Warehouse Co. is erecting warehouse; 80x170 ft.; corrugated roof; cost \$1600; capacity 1300 bales. (Lately noted inceptd., \$3000 capital, by S. C. Boswell and others.)

Okla., Bokchito.—Bokchito Gin Co. will erect cotton warehouse; capacity 1000 to 1200 bales.

Okla., Bennington.—Bennington Cotton Warehouse Co. inceptd. with \$5000 capital stock by J. S. Dawson, L. E. Batchelder, M. W. LeFlore and others.

Okla., Caddo.—Caddo Bonded Warehouse Co. inceptd. with \$10,000 capital stock by Amos K. Bass, J. A. Moore, J. A. Crutchfield and others.

Okla., Chandler.—Chandler Warehouse Co. inceptd. with \$2000 capital stock by K. Jacobs, Clyde Crame and E. J. Conklin.

Okla., Haskell.—First National Bank is erecting cotton warehouse.

Okla., Haskell.—Hulquist Gin Co. is erecting cotton warehouse.

Okla., Hugo.—Choctaw County Warehouse inceptd. with \$5000 capital stock by R. D. Welbor, C. L. Webb and J. H. Jackson; will soon let contract to erect warehouse.

Okla., Lexington.—Lexington Warehouse Co. inceptd. with \$5000 capital stock by Chas. Greenmore, T. W. Keller, A. F. Church and others.

Okla., Marlow.—T. T. Eason, J. J. Briscoe and T. L. Wade are interested in erecting warehouse; 60x165 ft.; galvanized iron, timber and concrete.

Okla., Marietta.—Farmers & Merchants' Bonded Warehouse Co. inceptd. with \$20,000 capital stock; H. A. Keller, Atty.

Okla., Noble.—Noble Cotton Warehouse Assn. inceptd. with \$3000 capital stock by W. L. Fessenback, J. A. Morrison and others.

S. C., Bamberg.—Bamberg Cotton Warehouse Co. inceptd. with W. D. Road, Pres.; G. Frank Bamberg, V.-P.; H. M. Graham, Secy.-Treas.; will erect warehouse.

S. C., Bethune.—Buffalo Warehouse Co. incorporated by J. A. Stone, G. S. King, Joe Hough and A. B. McLaurin; erect warehouse; 50x100 ft.; ordinary construction; galvanized roofing; cost \$1000; contract let locally.

S. C., Bishopville.—Farmers' Warehouse Co. inceptd. with \$5000 capital stock by J. S. Corbett, Geo. M. Stuckey, J. M. Heuron and S. L. Austin.

S. C., Blenheim.—Blenheim Warehouse Co. was inceptd. with \$2000 capital stock by J. R. Townsend, C. C. Chamness, J. J. Hood and W. L. John.

S. C., Denmark.—Denmark Warehouse Co. inceptd. by W. L. Riley, W. S. Cooper and R. L. Ziegler.

S. C., Dunbar.—Dunbar Warehouse Co. will erect cotton warehouse; 80x100 ft.; ordinary construction; galvanized roof. (Lately noted inceptd., \$2000 capital, by Jas. H. Wright and others.)

S. C., Raeford.—Hoke Warehouse Co. organized with W. T. Covington, Pres.; T. H. Walters, V.-P.; W. B. McLaughlin, Secy.-Treas., to erect two cotton warehouses, each with capacity of 600 bales.

S. C., Elore.—Elore Warehouse Co. inceptd. by W. M. Fair, J. S. Dantzier and R. L. Mooner.

S. C., Latta.—H. A. Bethea is interested in erecting cotton warehouse; brick; cost \$5000.

S. C., Manning.—Home Warehouse Co. inceptd. with \$2000 capital stock by E. C. Horton and Charlton Durlant.

S. C., Smoaks.—Smoaks Warehouse Co. inceptd. with \$2000 capital stock by J. W. Kinzy, W. H. Varn, F. J. Berry and S. P. J. Garris, Jr.

S. C., Spartanburg.—Spartanburg Warehouse Co., C. S. Webb, Pres., is reported to increase capital stock from \$15,000 to \$40,000.

S. C., Walterboro.—Planters Warehouse Co. of Colleton County organized with \$5000; Paul Sanders, Pres., Ritter, S. C.; J. E. Peurifoy, V.-P., Walterboro; will erect temporary cotton warehouses at Walterboro, Lodge, Ashton (R. F. D. from Lodge), Mosselle (R. F. D. from Islandtown), Cottageville and Ritter; covered with tarpaulin or heavy duck; capacity 500 bales.

Tenn., Carthage.—Upper Cumberland Loose Leaf Tobacco Warehouse Co. will erect warehouse; construction in charge of F. J. Manley, Lexington, Ky.

Tenn., Memphis.—Company is being organized with \$1,000,000 capital stock to erect emergency warehouses for cotton and act as guarantors to bankers in St. Louis, Chicago and other cities; S. F. Clark (Chrmn.), B. L. Mallory and F. G. Barton, committee on construction.

Tenn., Union City.—Business Men's Club is reported to establish cotton warehouse; F. L. Pitman of Union City Gin, J. C. Burdick, Sr., and J. A. Coble, Sr., Com.

Tex., Annona.—First National Bank is reported interested in erection of cotton warehouse.

Tex., Ballinger.—Young Men's Business League is organizing company to erect cotton warehouses with capacity of 7000 to 10,000 bales.

Tex., Bay City.—Farmers' Storage Co. Incptd. with \$20,000 capital stock by F. S. Robbins, E. L. Perry and John W. Gaines.

Tex., Bowie.—Chamber of Commerce is promoting erection of cotton warehouse with capacity of 5000 bales.

Tex., Bynum.—Bynum Warehouse Co., J. M. White, Prest., will erect warehouse; 224x128 ft.; double and triple decked; steel clad; cost \$16,000. (Lately noted.)

Tex., Decatur.—Farmers' Union Warehouse Co. organizing to erect cotton warehouses.

Tex., Denton.—J. W. Underwood, W. F. Jarrell and others are reported promoting erection of cotton warehouses.

Tex., Eddy.—J. R. Knight and others will erect cotton warehouse; 80x160 ft.; corrugated sheet iron; concrete base; capacity 1200 bales; cost \$1600.

Tex., Galveston.—Texas Cotton Factors Warehouse Co. Incptd. with \$50,000 capital stock by Richard P. Harriess, Silas D. Reid and Robt. M. Harriess.

Tex., Gilmer.—Paul Smith has charge of erecting warehouse; sheet iron and frame construction; capacity 2000 bales cotton.

Tex., Haskell.—R. V. Robertson is reported interested in erection of cotton warehouse.

Tex., Jacksonville.—Jacksonville Warehouse Co. Incptd. with \$3000 capital stock by W. L. Dublin, M. C. Parrish and Frank Devereux.

Tex., Marlin.—Marlin Co-operative Warehouse Co., W. M. Gunnell, Prest., Incptd. with \$30,000 capital stock to erect warehouse; sheet iron; size not determined; cost \$2000. (Lately noted.)

Tex., Mayfield.—W. H. Webb (Chrmn.), Arthur Bolin and Frank Stanford are committee promoting erection of cotton warehouse.

Tex., Megargle.—Megargle Warehouse Co. will erect cotton warehouse; 80x160 ft.; iron-clad frame building; corrugated iron; cost \$1500. (G. C. Haile and others lately noted organizing company to erect warehouse.)

Tex., New Braunfels.—Farmers' Gin Association is reported to erect cotton warehouse; capacity 1500 bales.

Tex., Plano.—Farmers' Gin Co. will erect cotton warehouse; 80x160 ft.; ordinary construction; iron roof; cost \$3000.

Tex., Port Lavaca.—Port Lavaca Warehouse Co. will erect cotton warehouse; 80x160 ft.; galvanized iron; day labor. (F. O. Moore and others lately noted to organize company to erect warehouse.)

Tex., Richland.—Richland Warehouse Co. will erect cotton warehouse; 64x200 ft.; ordinary construction; iron roof; cost \$1600; construction by owners.

Tex., San Antonio.—San Antonio Cotton Storage Co. Incptd. by H. C. King, Jr., Orville G. Frantz and S. C. Kile.

Tex., Sherman.—Chamber of Commerce, R. L. Hall, Asst. Secy., 226 N. Travis St., is interested in organizing warehouse corporation with \$5000 capital to erect (if necessary) 2 or 3 cotton warehouses; 80x160 ft.; corrugated-iron construction; capacity 1000 bales; cost \$1000 each.

Tex., Terrell.—C. B. Carswell lets contract Sept. 30 to erect cotton warehouse; 125x250 ft.; open shed; cost \$4000. (Lately noted.)

Tex., Tenaha.—Tenaha Cotton Warehouse Co. organized with \$2500 capital stock; is erecting iron-clad warehouse with capacity of 1500 bales.

Tex., Tyler.—Commissioners' Court is reported to have appropriated \$10,000 to erect \$5000 cotton warehouse in Tyler and structures outside of city; capacity of former, 10,000 bales.

Tex., Weimer.—John E. Robertson is reported interested in erection of cotton warehouse.

Tex., Wichita Falls.—Wichita Falls Cotton Warehouse Co. will be Incptd. with \$5000 capital stock by Frank Kell, R. E. Huff and others to erect cotton warehouse; probable capacity 2500 bales.

Tex., Windom.—First State Bank advises that \$1600 has been subscribed to build cotton warehouse; sheet iron; open sides.

Va., Norfolk.—Security & Safe Deposit Co. opened bids to erect fireproof concrete storage warehouse at Front and 1st Sts.; Richardson Construction Co., Norfolk, is lowest bidder; Neff & Thompson, Archts., Norfolk.

Va., Richmond.—Purity Ice Cream Co. will repair warehouse at 8 S. Jefferson St.; cost \$7500.

Va., Richmond.—Clarence E. Crosby will erect warehouse on Cary St., between 15th and 17th Sts.; cost \$25,000.

ing; cost \$3300; O. S. Billings, Archt., 407½ Union St., Nashville. (Lately noted.)

## CITY AND COUNTY

Ga., Columbus.—Hospital.—Columbus Iron Works Co., Columbus, has contract for iron beams and material for erection of city hospital, for which Southern Ferro-Concrete Co., Atlanta, Ga., has general contract; 4 stories and basement; fireproof; reinforced concrete frame; tar and gravel roof; steam heat; electric lights and elevators; cost about \$50,000 without mechanical equipment; E. C. Wachendorf, Archt., Empire Bldg., Atlanta. (Lately noted.)

## DWELLINGS

Ala., Birmingham.—Dr. R. V. Mobley let contract to G. W. Williams, Birmingham, to erect residence; 2 stories; frame; cost \$3500.

Ala., Birmingham.—J. D. Phillips let contract to J. Blomley, Birmingham, to erect 1-story frame residence; cost \$3000.

Ala., Birmingham.—J. F. Seay let contract to Q. L. Gori, Birmingham, to erect 2-story frame dwelling; cost \$6000. (Lately noted.)

Ala., Birmingham.—P. W. McKerral let contract to F. M. Savage, Birmingham, to erect 1-story frame building; cost \$2700.

Ala., Birmingham.—W. A. Trimble let contract to R. B. Earlington, Birmingham, to erect 1-story dwelling; cost \$2000.

Ala., Birmingham.—Henry J. Porter, Jr., has plans by and let contract to Joy Marriott Construction Co., Birmingham, to erect dwelling; 2 stories; 8 or 9 rooms; brick veneer and stucco; terra-cotta tile shingle roof; hot-air heat; electric lighting. (Lately noted to cost \$6000.)

Ark., Blytheville.—Dr. F. H. Robinson let contract to C. M. Baxter to erect 2-story residence on W. Walnut St.

D. C., Washington.—J. W. Powell, 628 6th St. N. E., has contract to erect dwelling at 5617 Piney Branch Rd.; n.ill construction; flexible or composition shingle roof; hot-water heat; electric lighting; cost \$4500.

D. C., Washington.—A. Lehr will expend \$4000 to erect dwelling at 5617 Colorado Ave.; 24x30 ft.; mill construction; slate roof; hot-water heat; electric lighting; S. M. Medford, Archt., 1631 3d St. N. W., Washington; contract (lately noted) let to D. F. Swab, 426 Rittenhouse St., Washington.

Md., Baltimore.—Y. Goldstein let contract to Abell Building Co., 422 Equitable Bldg., Baltimore, to erect residence; 21x60 ft.; ordinary construction; slag roof; hot-water heat; combination lighting; dumbwaiter; cost \$12,000; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore. (Lately noted.)

Md., Catonsville.—Miss E. Messersmith will expend \$5500 to erect dwelling; 34x36 ft.; mill construction; slate roof; hot-water heat; gas and electric lighting; contract (lately noted) let to J. S. Hyatt, Catonsville.

Md., Frederick.—John S. Newman let contract to Lloyd C. Culler, Frederick, to erect residence in College Park; 12 rooms and 3 baths; colonial style; ground space 57x32 ft.; with building in rear 17x24 ft.; red brick; 14-ft. porch around two-thirds of structure; Smith & May, Archts., Law Bldg., Baltimore, Md.

Mo., St. Louis.—J. F. Brinkmeyer let contract to R. Blatterman, St. Louis, to erect 2-story dwelling at 4565 Tower Grove Pl.; cost \$7000.

Mo., St. Louis.—P. Neslag let contract to H. Folkers, St. Louis, to erect 2-story dwelling and 1-story garage at 9917 Connecticut St.; cost \$4450.

Mo., St. Louis.—A. Deldeschelmer let contract to Ambruster & Co., St. Louis, to erect 2-story dwelling at 4030 Magnolia St.; cost \$5750.

Tex., Austin.—Chas. W. Ramsdell let contract to W. A. Corby, Austin, to rebuild dwelling; 30½x42½ ft.; 1½ stories and basement; stucco on shingles; shingle roof; hot-air furnace; electric lighting; cost \$4500; H. F. Kuchne, Archt., Austin. (Lately reported burned.)

Tex., San Antonio.—J. W. Rogers let contract to S. W. Myers, San Antonio, to erect dwelling; 32x60 ft.; ordinary construction; tin roof; fireplaces; electric lighting; cost \$4000. (Lately noted.)

W. Va., Bluefield.—Dr. C. T. St. Clair will erect office and residence at Bland and Ramsey Sts.; brick; 62x30 ft.; 3 stories; tin shingle roof; hot-water heat; electric lighting; cost \$10,000; Alex. B. Mahood, Archt., Bluefield; contract let to S. Y. Cecil, Bluefield.

## GOVERNMENT AND STATE

Miss., Tupelo.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract to W. H. Fissell & Co., 1133 Broadway, New York, to erect postoffice; 1 story, mezzanine and basement; 4000 sq. ft. ground area; brick facing. (Lately noted.)

Tenn., Cookeville.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., let contract to W. H. Fissell & Co., 1133 Broadway, New York, to erect postoffice; 3 stories and basement; 5000 sq. ft. ground area; stone; ornamental terra-cotta; brick facing; composition slate roof; cost about \$90,000. (Lately noted.)

Tenn., Pulaski.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., let contract at \$46,314 to Algeron Blair, Montgomery, Ala., to erect postoffice; limestone; 1 story and basement; stone, brick and terra-cotta facing; tin and composition roof; 3700 sq. ft. ground area. (Previously noted.)

Va., Covington.—Postoffice.—Treasury Department, Oscar Wenderoth, Supervising Archt., Washington, D. C., will expend \$35,000 to erect postoffice; 30x75 ft.; one story and basement; concrete; tin roof; steam heat; gas and electric lighting; general contract (lately noted) let to Olla Gerlach, Archt., Frostburg, Md. (See Machinery Wanted.)

## MISCELLANEOUS

Fla., Live Oak.—Fair.—Suwannee Fair Assn. let contract to Jas. H. Peavy to erect buildings for agricultural fair; one 80x150x25 ft.; two 28x112x10 ft.; one 40x100 ft.; one 20x40 ft.; ordinary construction; galvanized iron roof; cost \$6000; Thos. Z. Atheson, Archt., Live Oak; contracts let to J. H. Foster at \$500 for fence and C. W. Scott at \$275 for painting; both of Live Oak. (Lately noted.)

Tex., Beaumont.—Sanitarium.—Garson Bros., Box 335, Shreveport, La., general contractors to erect sanitarium for Sisters of Incarnate Word, let following subcontracts: Christopher & Simpson Iron Works Co., St. Louis, cast iron and steel work; Coffeyville Vitified Brick & Tile Co., Coffeyville, Kans., face brick; Delatte & Lagrange and N. E. Buck Brick Mfg. Co., Lake Charles, La., common brick; A. Strachan, Houston, Tex., cut-stone work; Geo. W. Smythe Lumber Co., Beaumont, lumber, mill work, sand and cement; Averill Gravel Co., Cuero, Tex., and Tioga Gravel Co., Alexandria, La., gravel; J. E. Bolles Iron and Wire Works, Houston, Tex., elevator enclosures; Sangulnet, Staats & Gottlieb, Archts., Houston. (Previously noted to cost \$130,000.)

Va., Fredericksburg.—Stable.—R. G. Hill-drup let contract to Frank P. Stearns, Fredericksburg, to erect stable; E. G. Hefflin, Archt., Fredericksburg. (Lately noted.)

## SCHOOLS

Ark., Clarksville.—City let contract to Arkansas-Indiana Lumber Co., Clarksville, to erect high school; cost \$26,000; J. T. W. Jennings, Archt., Fort Smith, Ark. (Previously noted.)

Fla., Baker.—Santa Rosa County Board of Public Instruction let contract to Winston & Penny, Gainesville, Fla., to erect school building; 8 rooms; brick; Walker D. Willis, Archt., Pensacola; lately noted. (See Machinery Wanted.)

Fla., Largo.—Board of Public Instruction, Dixie M. Hollis, Secy., Clearwater, let contract to G. A. Miller, Tampa, to erect school; 3 stories; brick; tile roof; pine floors; heating not determined; cost \$20,000; Lester Avery, Archt., Clearwater, Fla. (Lately noted.)

Fla., Miami.—Dade County Board of Public Instruction let contract to Ecton & Tomlin, Fulford, Fla., to erect school at Miami Gardens; 21 ft. 4 in. x 72 ft. 4 in.; concrete or slow-burning construction; composition roof; cost \$2500; August Geiger, Archt., Miami; lately noted. (See Machinery Wanted.)

Ga., Cordele.—City let contract to Little & Phillips, Cordele, to erect grammar school; 53x96 ft.; brick veneer; pitch and gravel roof; Chas. W. Carlton, Archt., Lagrange, Ga. (Lately noted to cost \$10,000.)

La., Baton Rouge.—City let contract at \$13,176 to Cassano & Thibodeaux, Baton Rouge, to erect school; Benj. J. Goodman, Archt., 833 N. Boulevard, Baton Rouge. (Lately noted.)

Md., Capitol Heights.—School Commrs., Marlboro, Md., let contract to Burgess & Parsons, 700 10th St. N. W., Washington, to erect school; 82x75 ft.; ordinary construction.

## BUILDING CONTRACTS AWARDED

### APARTMENT-HOUSES

Tex., Houston.—Mrs. M. B. Buvens let contract to erect store and apartment building. (See Stores.)

Fla., West Palm Beach.—Mrs. Alice M. Knowles has plans by and let contract to Cooper C. Lighthown to erect apartment-house; 4 housekeeping suites; ordinary construction; asphalt shingle roof; electric lighting. (Lately noted.)

Mo., St. Louis.—Chas. Kramer let contract to J. Fischer & Son, St. Louis, to erect 2-story tenement-house at 2349 Chippewa St.; cost \$4100.

### ASSOCIATION AND FRATERNAL

Ky., Paris.—Y. M. C. A. let contracts to erect building on Main St. between 9th and 10th Sts.; Woods & Cain, Paris, contractors for foundation. (Previously noted.)

Tex., Weatherford.—Knights of Pythias let contract to Van Horn-Shaw Construction Co., Fort Worth, Tex., to erect dormitory at Knights of Pythias Widows and Orphans' Home, and to Cairp Bros., Weatherford, for plumbing, lighting and heating; 2 stories and basement; 158x70 ft.; fireproof reinforced concrete; brick with stone trimmings; Barrett's Specification roof; cost \$50,000 without mechanical equipment; central heating plant \$5000; lighting plant \$3000; C. H. Page & Bro., Archts., Austin.

### BANK AND OFFICE

Ga., Savannah.—Citizens' Southern Bank let contract to E. Morgan, Savannah, to erect addition to building; frontage 30 ft.; 6 stories; cost \$40,000; Mowbray & Uffinger,

Archts., 56 Liberty St., New York. (Lately noted.)

W. Va., Bluefield.—Dr. C. T. St. Clair will erect residence and office; contract let. (See Dwellings.)

### CHURCHES

Ala., Mobile.—All Saints' Episcopal Church let contract to F. H. Fleming & Co., Mobile, for concrete foundations and reinforced concrete and hollow tile floors for building; contract for superstructure will be let Sept. 26; seating capacity 400; cost about \$25,000; Jno. A. Wetzel, 533 Citizens' Bank Bldg., and Jos. Stone, Mobile, Asso. Archts. (Lately noted.)

Fla., Zephyrhills.—Methodist Church let contract to Clark & Fuller to erect building at 5th Ave. and 10th St.

Ky., Ashland.—Methodist Episcopal Church is reported to have let contract to erect building; cost about \$100,000; Verus T. Ritter, Archt., Huntington, W. Va. (Lately noted.)

Ky., Paducah.—First Baptist Church let contract on commission basis to erect building; C. W. Bulger & Son, Archts., Dallas, Tex.; lately noted. (See Machinery Wanted.)

Miss., West Point.—Methodist Church let contract to Marshall Construction Co., Eupora, Miss., to erect building; cost \$30,000; Alsop & Kuenapfel, Archts., West Point. (See Machinery Wanted.)

Tenn., Nashville.—Edgefield Cumberland Presbyterian Church let contract to A. H. Wright, N. 28th Ave. and Buchanan St., Nashville, to erect Sunday-school addition; 27x50 ft.; mill construction; pressed brick; Virginia slate roof; gas and electric light-



tion; slate roof; electric lighting; cost \$20,000; Hunter & Bell, Archts., Southern Bldg., Washington. (Lately noted.)

Md., Towson.—Maryland State Normal School Bldg. Co. let contract at about \$75,000 to Riggs, Distler & Stringer, 23-25 Light St., Baltimore, Md., for mechanical equipment for dormitory and power-house at Maryland State Normal School, including installation of 600-H. P. water-tube boilers, ice machines, pumps, water system, automatic stokers, vacuum heating system, ventilating system, etc.; Parker, Thomas & Rice, Archts., Union Trust Bldg., Baltimore; C. L. Reeder, Consult. Engr., 921 Equitable Bldg., Baltimore, Md. (Lately noted.)

S. C., Spartanburg.—Spartanburg Academy, A. B. Groce, Chmn. Bldg. Co., will expend \$15,000 to erect girls' dormitory at Groce Station; 45x103 ft.; ordinary construction; brick never; Barrett's gravel roof; hot-air heat; electric lighting; L. D. Proffitt, Archt., Spartanburg; contract (lately noted) let to E. J. Gibson, Greenville, S. C.; roofing contract, R. O. Pickens, Spartanburg.

Tenn., Rives.—City let contract to H. F. Doyle, Cotton Plant, Ark., to erect school; 57x87 ft.; asphalt shingle roof; hot-air heat; cost \$10,000; H. P. Taylor, Archt., Union City, Tenn. (Lately noted.)

Tenn., Sewanee.—Sewanee Military Academy will expend \$24,000 to repair Quintard Memorial Hall; install steam-heating plant, electrical work, plumbing, water-proofing and cement floors; 10,000 yds. plastering and painting, etc.; subcontracts let; E. H. Knight, Archt., Brown-Marx Bldg., Birmingham; general contract lately noted let to Realty Construction Co., First National Bank Bldg., Birmingham.

W. Va., Huntington.—City let contract to King Lumber Co., Charlottesville, Va., to erect school; main building 46x64 ft.; 2 wings, 32x56 ft.; fireproof corridors only; composition roof; blast furnace heat (separate contract) to cost \$4000; electric lighting; cost \$40,000; Verus T. Ritter, Archt., Huntington; excavation and masonry completed. (Noted in June.)

W. Va., Morgantown.—City let contract at \$111,085 to R. B. Kitchen Co., Wheeling, to erect high school, and at \$3200 to General Electric Co., Wheeling, for wiring; C. W. Bates, Archt., Wheeling. (Lately noted.)

## STORES

Ala., Birmingham.—Dr. L. H. Scantling let contract to C. W. Brown, Birmingham, to erect 2-story brick store; cost \$3750.

Ala., Birmingham.—W. A. Currie let contract to Joy-Marriott Construction Co., Birmingham, to erect 2-story brick building on Chestnut Hill; cost \$4500.

Ala., Birmingham.—Jos. Tehshevey let contract to C. Banks, Birmingham, to erect 2-story brick building; cost \$6250.

Ala., Birmingham.—Mrs. N. W. Scott let contract to W. E. Hyde, Ensley, Ala., to erect 1-story frame building; cost \$2500.

Ala., Birmingham.—M. A. Shofield let contract to M. C. Banks, Birmingham, to erect 1-story brick store on 2d Ave.; cost \$3250.

Ark., Newport.—A. D. Bailey is erecting business building on Front St.; brick; 85x59 ft.; 5 stories; steel ceilings; concrete floors; cost \$5000; W. H. Snetser, Contr., Newport.

Tex., Corpus Christi.—Born Investment Co. let contract to Thos. C. Born, Corpus Christi, to erect store building; 100x150 ft.; ordinary construction; composition roof.

Tex., Dallas.—Mrs. Sallie A. Gibbs (Hann & Kendall, Agts.) is reported to have let contract to Watson Co., Dallas, to erect 40 store fronts on Elm and St. Paul Sts.; white enameled brick, with green tile trimmings.

Tex., Houston.—Mrs. M. N. Buens let contract to Trigg & Roman, Houston, to erect building at Clay and San Jacinto Sts.; 2 stories; 52x128 ft.; brick; lower floor for stores; upper floor, eight 2-room apartments; cost \$20,000; Green & Finger, Archts., Houston. (Lately noted to erect 1-story structure, but plans changed.)

Va., Lynchburg.—Jas. Gorman let contract to W. K. Banger to erect store building; 23x73 ft.; slag roof; electric lighting; cost \$6000; McLaughlin & Johnston, Archts., Lynchburg. (Lately noted.)

## THEATERS

Ga., Eatonton.—Chas. M. A. Smith let contract to S. J. Leonard, Jr., to remodel building for theater; 23x140 ft.; brick; galvanized iron roof; furnace heat; electric lighting; cost \$2000 to \$5000; lately noted. (See Machinery Wanted.)

Md., Baltimore.—Geo. A. Fuller Co., Munsey Bldg., Washington, D. C., Gen Contr.

to erect Garden Theater, let following subcontracts: Concrete arches, White Fireproofing Co.; plastering, McNulty Bros.; hollow metal windows, C. E. Trulock; ornamental iron, Madison Iron Works; elevators, Otis Elevator Co., all of New York; brass work, U. T. Hungerford Co., 1224 Fidelity Bldg.; millwork, Jos. Thomas & Son, 1125 Leadenhall St.; sheet metal and roofing, Wm. F. Zeller & Co., 1119 Denver St., all of Baltimore; tile and terrazzo work, American Mosaic Co., 921 I St. N. W., Washington, D. C.; building, 165x120 ft.; cost \$150,000. (Contract for steam heating plant and fan air washer and ventilating system lately noted let to Riggs, Distler & Stringer, 23 Light St., Baltimore, at \$7000.)

N. C., Salisbury.—Mrs. Nellie H. Pearson has plans by and let contract to C. P. Foster, Salisbury, to erect addition to theater for Gem City Amusement Co.; 20x105 ft.; fireproof; metal roof; steam heat; electric lighting; cost \$2500; contract for heating let to J. J. Smith, Greensboro, N. C.

Tex., Fort Worth.—M. Cohn let contract to Rogers & Bradshaw, Fort Worth, to erect motion-picture theater; 33x30 ft.; fireproof; gravel and tar roof; gas heat; electric lighting; cost \$5000; Chas. F. Allen, Archt., City Hall Bldg., Fort Worth. (Lately noted.)

## WAREHOUSES

Ala., Attalla.—Noojin & Copeland Hardware Co. let contract to A. Brown, Attalla, to erect warehouse; 40x140 ft.

Ky., Louisville.—Axton Fisher Tobacco Co. let contract to erect warehouse and power-house lately noted (See Miscellaneous Factories)

Mo., St. Louis.—Rammond Real Estate Co. will erect 4-story warehouse at 218 S. Wharf; cost \$3500; construction by owner.

N. C., Gibson.—State Line Warehouse Co. let contract to McCallum & Benston, McColl, S. C., to erect cotton warehouse; 600 bales capacity; iron-clad; ordinary construction.

## RAILROAD CONSTRUCTION

### RAILWAYS

Ala., Bessemer.—An ordinance has been introduced in the City Council to permit the Alabama Great Southern R. R. to build another track beside its existing track and upon its own right of way from 4th St. to 22d St., this including a viaduct for the line from 19th St. nearly to 24th St. W. H. Wells, Ch. Engr. of Constr. Southern Ry., Washington, D. C., is in charge of plans.

Ala., Florence.—Florence & Huntsville Interurban Ry. Co. is organized and incorporated to build an electric railway from Florence to Huntsville, Ala., 60 mi., including a branch from Killen via Arkdell to Lexington, about 15 mi., which may finally be extended to Pulaski, Tenn. Thurston H. Allen is Pres.; T. W. Pratt, V.-P., and N. F. Thompson, Secy.-Treas.

Ark., Mena.—Missouri, Arkansas & Southwestern Railway Co. has been authorized by the State authorities to sell \$1,500,000 of preferred stock for its proposed line from Mena to Hot Springs, 80 mi. Several preliminary surveys have been made. J. H. Scoggin is Pres. and Minor Pipkin, Secy. George D. Thayer is Pres. of the Century Construction Co., which is to build the road.

Ark., Murfreesboro.—Memphis, Dallas & Gulf R. R. is fast completing 19-mi. link between Murfreesboro and Shawmut, Ark., and may finish, as expected, early in October. About 14 mi. tracklaying yet to be done, on which 12 mi. of grade are ready. (See Manufacturers Record, Aug. 6.)

Ga., Atlanta.—North Georgia Mineral Ry. Co., capital \$1,250,000, which may be increased to \$2,500,000, has applied for charter to build a line from Atlanta northward through Fulton, Cobb, Cherokee and Bartow counties to Warford Crossing, about 50 mi. Headquarters in Atlanta. Incprts.: Jack J. Spalding, George S. Lowndes, John Morris, Daniel Macdougald, A. E. Thornton, Alex. C. King, H. S. Collingsworth, Hughes Spalding, W. J. Morrison and James S. Floyd.

Ga., Homer.—Survey for a new railroad from Lula to Homer, 12 mi., is reported begun. The Mayor may be able to give information.

Ga., Rocky Ford.—Rocky Ford & Southwestern Railway, to run from Rocky Ford to Portal, about 12 mi., is projected, says a report, by Capt. Henry B. Griffin, formerly of Hamlet, N. C., and others. This would be practically an extension of the Sylvan &

N. C., Laurel Hill.—Laurel Hill Cotton Warehouse Co. Incptd. with \$30,000 capital stock by Z. V. Pate, A. H. McDonald and G. S. Hargrave; erect 3 cotton and cottonseed warehouses; 50x60 ft.; wood frame covered with metal; cost \$1500; let contract to C. E. Duncan.

N. C., Wilson.—Wilson Cotton Storage Co. let contract to E. F. Killette, Wilson, to erect cotton warehouse; 5 compartments, 80x88 ft. each; mill construction; Carey's roof; capacity for 3600 bales; will erect 3 sections at present; cost \$9407; Benton & Moore, Archts., Wilson. (Lately noted.)

Tex., Daingerfield.—Williams Bros. have plans by and let contract to Alfonso Knight to erect cotton warehouse; 80x160 ft.; frame; galvanized corrugated iron; cost \$2000.

Tex., Hillsboro.—Farmers & Merchants' Warehouse Co. let contract to Barks & Barstow Mfg. Co., 1417 Busch Bldg., Dallas, to erect cotton warehouse; 100x290 ft.; fireproof; galvanized-iron roof; cost \$10,000; material purchased. (Lately noted at Tex., Dallas.)

Tex., Houston.—Jno. M. Dorrance and Jas. A. Baker are reported to have let contract to Central Contracting Co., Houston, to erect warehouse to be occupied by Western Electric Co.; 2 stories and basement; brick; fireproof; 100x100 ft.; cost \$32,000. (Lately noted.)

Tex., Lolita.—Lolita Warehouse Co. has plans by and let contract to M. Cleveland, Lolita, to erect cotton warehouse; 40x80 ft.; ordinary construction; galvanized iron on wood rafters; cost \$1200.

Tex., Trinity.—Trinity Warehouse Co. let contract to Mr. Fain to erect cotton warehouse; wood frame; sheet-iron top and sides; electric lighting; cost \$2000.

Tex., Wichita Falls.—H. B. Hines has contract to erect several cotton warehouses; 80x120 ft.; ordinary construction; metal roof; cost \$1000 each.

Newark, Bethel, Shelbyville, Shelbyna, Paris, Mexico and Fulton.

N. C., Coinjock.—Currituck & Dare County R. R. Co., which proposes to build either to a connection with the Norfolk Southern R. R. or direct to Norfolk, Va., is progressing with its plans, right of way being promised for part of the distance. S. T. Montague and I. T. Van Patten of Norfolk, Va., may give information.

N. C., Kinston.—J. T. Deal of the Kinston Mfg. Co., lumber manufacturer, has applied to the Board of Aldermen for a railroad franchise to connect with the Atlantic Coast Line. He proposes to build a railroad from Kinston to Maple Hill, N. C., 35 or 40 mi. southward, using for part of the way a logging line of the company from Pink Hill to Beaulville, 9 mi.

Tenn., Chattanooga.—The Queen & Crescent Route will spend \$80,000 for improvements on the Chattanooga Belt Line, which will include construction of second main line track between East End Ave. and the "Y" connection with Lookout Mountain tunnel line. C. Dougherty, Cincinnati, O., is Chief Engr.

Tenn., Jellico.—Jellico Coal & R. R. Co. will build line 20 mi. long from Pine Knot, Ky., to Jellico, including three small bridges and two tunnels, one half a mile long through Jellico Mountain and one about 300 ft. long near the Queen & Crescent R. R. Route through rough country. Will be ready in 30 days for construction bids. W. E. Wheelock is Pres., S. C. Tarver V.-P., D. F. Beckham Secy. and Treas., all of Chattanooga, Tenn.; Col. D. C. Barker of Jellico is Ch. Engr. Franklin Harris of Chattanooga and C. P. Price of Knoxville, Tenn., are directors, and they with the first three officers named constitute the board.

Tenn., Nashville.—The Nashville Commercial Club has organized a committee with Emmett Cooper as chairman to raise a fund for a railroad survey from Nashville to Corinth, Miss., about 140 mi.

Tex., San Antonio.—San Antonio, San Jose & Medina Valley Interurban Ry. Co., which now has 5 mi. of line in operation from San Antonio to San Jose, proposes to build 37 mi. more via Kirk, La Costa and Castroville to Medina Lake, including a 100-ft. steel bridge over Medina River and 60-ft. steel bridge over Leon Creek. Date for construction bids not yet fixed. J. G. Miller, 400 Swearingen Bldg., San Antonio, is Gen. Mgr. and Chief Engr. Other directors are A. D. Powers, Pres.; E. O. Burton and H. L. Miles, V.-Ps., and A. J. Bell. C. A. Newton is Secy.

Tex., Van Horn.—E. G. Beecher and F. J. Cumming are reported to have contracts for construction of the Van Horn Valley R. R. from Van Horn into New Mexico, about 100 mi. J. M. Daugherty, J. Y. Cannon and Joseph Irby, all of Van Horn, are interested. (See Manufacturers Record, May 14.)

Va., Roanoke.—Norfolk & Western Ry. has let contract to Walton & Co. to clear and repair a timbered tunnel on the Pocahontas division, which caved in. J. E. Crawford, Roanoke, is Ch. Engr.

Va., Sulters.—Norfolk & Western Ry. is reported, contemplates extension from Sulters to Cedar Bluff, about 22 mi. J. E. Crawford, Roanoke, Va., is Ch. Engr.

W. Va., Parkersburg.—Charleston, Parkersburg & Northern Ry. Co. will not let contracts before next spring for its proposed line of about 75 mi. from Parkersburg to Charleston, W. Va. Maximum grade 1.75 per cent.; maximum curve 9 degrees. About 28,000 cu. yds. per mi. will have to be handled. There will be 5 tunnels from 800 to 2300 ft. long each. H. H. Archer is Pres. and Robert Cutler, Chief Engr., at Parkersburg.

## MACHINERY, PROPOSALS AND SUPPLIES WANTED

**Air Compressor.**—Okolona Ice Factory, John K. Kaye, Propr., Okolona, Miss.—Prices on belted compressor of about 2 or 3 tons capacity.

**Air Washers.**—Treasury Dept., Office Supervising Archt., O. Wenderoth, Supervising Archt., Washington, D. C.—Proposals until Sept. 22 for air washers, humidifiers, tempering coils, etc., in United States post-office, custom-house and courthouse at Cleveland, O., in accordance with drawing and specification, copies of which may be obtained from custodian of building at Cleveland or at above office at discretion of Supervising Archt.

**Blackboards.**—Walker D. Willis, Pensacola, Fla.—Prices on blackboards.

**Blackboards (Slate).**—Wm. F. Elder, Cumberland, Md.—Prices on slate blackboards for school at Midland, Md.

**Blacksmith Shop Equipment.**—See Foundry Equipment, etc.

**Boilers and Stack.**—Bureau of Yards and Docks, H. R. Stanford, Chief, Navy Dept., Washington, D. C.—Bids until Oct. 3 to furnish and install two 50 H. P. boilers, with steel stack, at pumping station, Naval Disciplinary Barracks, Port Royal, S. C.; plans and specifications obtainable on application to Bureau.

**Brass Tubes.**—See Thermometer Materials.

**Brass Sheets.**—See Thermometer Materials.

**Bridge Construction.**—Bradley County Comms., T. E. Bratton, Commr., Warren, Ark.—Bids Oct. 6 at Clerk's office to construct bridge; 385 ft. long, 16-ft. roadway.

**Bridge Construction.**—Brunswick County Comms., Lawrenceville, Va.—Bids until Sept. 28 to construct 3 bridges as follows: One over Sturgeon Creek, 54 ft. 3 in. long, and one over Sandy and Rose creeks, each 36 ft. 3 in. long; superstructures include (for first bridge) 3 steel spans, each 18 ft. long; latter two 18-ft. spans each; 12-ft. roadway for each structure; G. P. Coleman, State Highway Commr., Richmond, Va.; blueprints obtainable on application to Childrey Co., Richmond, at 35 cents and postage.

**Bridge Construction.**—Newton County Comms., C. M. Wells, Clerk of Board, Newton, Miss.—Contract let Oct. 5 to build 18 bridges in Dist. No. 4 over streams on Newton-Lawrence and Roberts Rds., Tanglewood extension, Lake Hazel, and Newton and Garlandville Rds.; total length of bridges, 1600 ft.; to be constructed of A. I. creosoted timbers, in accordance with specifications in office of Clerk.

**Bricks.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish 132,000 dark red hard-burned bricks, schedule 7306; delivery Washington; for schedules apply to navy pay office nearest navy-yard.

**Building Materials.**—Marshall Construction Co., Eupora, Miss.—Prices on building materials for \$30,000 church building at West Point, Miss.

**Building Materials.**—Olin Gerlach, Frostburg, Md.—Prices on brick, mill work, concrete roof, plumbing, painting, electric wiring and conduit work for \$35,000 post-office at Covington, Va.

**Canning Machinery.**—H. W. Peterman, Mt. Pleasant, Tex.—Data and prices on equipment for canning factory.

**Cement, etc.**—Harris County Comms., H. L. Washburn, County Auditor, Houston, Tex.—Bids until Sept. 21 to furnish 75 bbls. Portland cement, 35 yds. sand, 60 yds. one-in. rock, f. o. b. South Houston, for Harris County School for Boys; specifications on file with A. C. Finn.

**Cloth (Cartridge), Cord, etc.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Sept. 29 to furnish 105,000 sq. yds. cartridge bag cloth, silk, light and heavy; 400,000 yds. cartridge bag lacing cord, spun silk braided, schedule 7279; delivery f. o. b. works, etc.; for schedules apply to navy pay office nearest navy-yard.

**Coal.**—U. S. Engr. Office, Norfolk, Va.—Proposals until Oct. 12 for furnishing about 2000 tons of bituminous coal. Information on application; E. Eveleth Winslow, Lieut.-Col., Engrs.

**Concrete Work.**—San Antonio Water Supply Co., R. J. Harding, V.-P. and Gen. Mgr., San Antonio, Tex.—Correspondence with contractors for heavy concrete work to be undertaken in connection with erection of pumphouse, boiler-house, coalbin, oil tank, etc., for which plans and specifications are about completed.

**Corn Mill Machinery.**—See Flour Mill Machinery, etc.

**Cotton Machinery.**—Jonesboro Supply House, Jonesboro, Tenn.—Prices on machinery for knitting or weaving cotton yarn part of mops.

**Cranes.**—See Machine Tools, etc.

**Cranes.**—See Machine Tools, etc.

**Crusher (Rock).**—W. R. Wallace & Co., Fort Myers, Fla.—Prices on second-hand 30 to 40-ton jaw rock crusher.

**Culvert Construction.**—Harris County Comms., Houston, Tex.—Bids until Sept. 28 to furnish material and construct two 6-ft., two 8-ft. and two 10-ft. concrete culverts; plans and specifications on file with County Engrs., from whom copies may be obtained; H. L. Washburn, County Auditor.

**Domestic Novelties.**—Cob. Wilson, Bailey, N. C.—Catalogues and prices of novelties for household use, such as brooms and brushes of all patterns, etc.

**Drainage Canal.**—A. W. Stovall, Chrmn., Drainage Dist. No. 3, Madison County, Jackson, Tenn.—Bids until Oct. 1 to clear right of way 200 ft. wide and dig drainage canal 14.95 mi. long; also clearing rights of way for and excavating 5 small laterals 100 ft. wide; total earth removal, about 842,854 cu. yds.; maps, profiles and data on application.

**Drainage.**—Comms. for Kerr and Sills Creek Drainage Dist., Rowan County, Salisbury, N. C.—Bids until Oct. 3 to drain Kerr and Sills creeks; remove 339,178 yds. material; cost \$25,500; plans and specifications in Clerk's office, Salisbury; C. M. Miller, Engr. and Supt., Salisbury.

**Drainage Canals.**—Drainage Comms., Jefferson County Drainage Dist. No. 4 (C. F. Jackson and others), Beaumont, Tex.—Bids until Sept. 21 at office J. D. Wilkerson, Wiess Bldg., to construct drainage canals; 4 canals aggregating 21.4 mi. in length, bottom widths 6 to 20 ft., depths 6 to 9 ft., all side slopes 1 to 1; total yardage, 623,000 cu. yds.; all earth excavation across open prairies; plans, profiles and specifications on file with J. D. Wilkerson, Wiess Bldg.

**Drainage Canals.**—Geo. A. Prather, Chrmn. of Com., Selmer, Tenn.—Contracts let Oct. 6 to construct drainage canals in Huggins, Sheffields, Lick and Billy's creeks in northern part of McNairy county, Tenn.; Huggins Creek, 5 87-100 mi. long, 20 ft. top, 13 1/2 ft. bottom, depth 7 ft.; Billy's Creek, 2 5-10 mi., 18 ft. top, 12-ft. bottom, depth 6 ft.; Sheffields Creek, 2 mi., 8-ft. top, 4-ft. bottom, depth 4 ft.; Lick Creek, 9-700 mi., 8-ft. top, 4-ft. bottom, depth 4 ft.; clearing right of way included.

**Electric Light Fixtures.**—C. W. Bulger & Son, Dallas, Tex.—Prices on 11 electric fixtures for indirect lighting of church building at Jonesboro, Ark.; also for electric wiring and fixtures for indirect lighting for church building at Paducah, Ky.

**Electric Motor.**—Wm. E. Dalloz, Box 1008, Jacksonville, Fla.—Electric motor. (See Machine Shop Equipment.)

**Electric Wires.**—See Thermometer Materials.

**Electrical Cable.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish 500,000 ft. interior communication cable and 15,000 ft. telephone cable; 187,600 ft. twin leaded and armored cable, schedule 7304; delivery Brooklyn; for schedules apply to navy pay office nearest navy-yard.

**Electrical Machinery.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish direct-current motor, schedule 7312; delivery Annapolis, Md.; for schedules apply to navy pay office nearest navy-yard.

**Electrical Machinery.**—J. L. Boney, Wallace, N. C.—Prices on small dynamo to light town; alternating current; also wants several transformers.

**Electrical Machinery.**—H. S. Johannsen, 50 Church St., New York.—Communications from manufacturers of electrical machinery for shipment to Norway (See Mill Supplies, etc.)

**Electrical Machinery, etc.**—Ecton & Tomlin, Fulford, Fla.—Prices on 100 and 150-light dynamo, wire and general electric-light equipment for switchboard; would consider second-hand dynamo and switchboard; also catalogues and prices on electric supplies.

**Electrical Machinery.**—Walhalla Light & Power Co., Walhalla, S. C.—Second-hand generator, 100 K. W., with switchboard and exciter; first-class condition.

**Elevator.**—P. P. Martinez, 1808 Main St., Dallas, Tex.—Prices on electric elevator for automobiles.

**Fans.**—Engineer Depot, U. S. Army, Washington Barracks, D. C.—Proposals until Sept. 28 for furnishing motor-driven ventilating fan coupled to and driven by 110-volt, 3-phase, 60-cycle squirrel cage induction motor. For further information address Joseph E. Kuhn, Lieut.-Col., Corps of Engrs.

**Feed Mill Machinery.**—See Flour Mill Machinery, etc.

**Feed Water Heater.**—Navy Dept., Bureau Yards and Docks, H. R. Stanford, Chief of Bureau, Washington, D. C.—Bids until Oct. 3 to furnish and install filtering feed water heater at naval hospital, Las Animas, Colo. Specifications on application.

**Fill.**—State Roads Com., O. E. Weller, Chrmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Sept. 16 to make fill at Baltimore city end of Hanover St. bridge, under Arcade, about 10,000 cu. yds.; bids to be on blank form contained in book of specifications; specifications and plans furnished by Com. for \$1.

**Fireproof Construction.**—Tennessee Industrial Film Co., R. M. Shaw, Prest., Knoxville, Tenn.—Prices on fireproof construction for \$8000 building.

**Flour Mill Machinery, etc.**—N. D. Lewis, Cordele, Ga.—Prices on machinery for flour, feed and corn mills.

**Foundry Equipment, etc.**—Hefner & Maysilles, 1 Maple Ave., Grafton, W. Va.—Prices on 42-in. cupola with complete foundry outfit; also brass foundry outfit, two lathes, two drills, shaper, hydraulic wheel press, hack saw, pattern shop machinery, blacksmith forge and outfit, etc.

**Galvanizing.**—New York Central Iron Works Co., Hagerstown, Md.—Addresses of firms (Baltimore and the South preferred) that galvanize steel tanks.

**Glass (Plate).**—F. F. Cherry, Aurora, N. C.—Addresses of manufacturers of and dealers in plate-glass, 7x8 ft. and 8x8 ft., for store fronts.

**Grading, etc.**—Marion County Comms., Mack Pearce, Probate Judge, Hamilton, Ala.—Bids Oct. 9 to grade and drain 50 mi. road; specifications at office of S. E. Neill, Highway Engr.

**Heating Plant.**—E. C. Knight, Livingston, Tenn.—Prices on hot-water heating plant for 2-story office building.

**Heating Plant.**—Olin Gerlach, Frostburg, Md.—Prices on steam-heating plant for \$35,000 postoffice at Covington, Va.

**Hardware.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish 248 pairs loose pin hinges, schedule 7317; delivery Charleston, S. C.; for schedules apply to navy pay office nearest navy-yard.

**Heating Plant.**—Chas. M. A. Smith, Eatonton, Ga.—Prices on furnace for \$2900 to \$5000 theater building.

**Heating Plants.**—C. W. Bulger & Son, Dallas, Tex.—Prices on heating plants for church buildings at Jonesboro, Ark., and Paducah, Ky.

**Heating and Ventilating.**—Mobile County School Comms., S. S. Murphy, Supt. of Education, Yerby Bldg., Mobile, Ala.—Bids until Sept. 23 for heating and ventilating 4 public schools in Mobile, in accordance with plans and specifications by Martin J. Lide, Consult. Engr., 905 Woodward Bldg., Birmingham.

**Hospital Equipment.**—See Vacuum Cleaning, etc.

**Household Supplies.**—See Domestic Novelties.

**Ice and Refrigerating Plant.**—Bureau of Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Navy Dept., Washington, D. C.—Bids until Sept. 22 to furnish and install refrigerating and ice plant at Naval Academy Dairy Farm, Gambrills, Md.; applications for proposals to refer to schedule 7236; blank proposals furnished on application to Navy Pay Office, Baltimore, Md., or to Bureau.

**Iron (Structural and Ornamental).**—Olin Gerlach, Frostburg, Md.—Prices on structural and ornamental iron for \$35,000 postoffice at Covington, Va.

**Kilns (Lime).**—Carl Shuey, Hot Springs, Ark.—Prices from manufacturers on continuous limekilns.

**Lighting Equipment.**—Tennessee Industrial Film Co., R. M. Shaw, Prest., Knoxville, Tenn.—Prices on lighting equipment for \$8000 building.

**Laundry Equipment.**—See Vacuum Cleaning, etc.

**Lumber.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish 1000 ft. white dressed oak, 16,000 ft. North Carolina dressed pine, 800 pieces sugar dressed pine and miscellaneous lot yellow pine, schedule 7307; delivery Washington; for schedules apply to navy pay office nearest navy-yard.

**Machine Shop Equipment.**—Wm. E. Dalloz, Box 1008, Jacksonville, Fla.—Drill press, milling machine, hack saw, punch, bolt cutter for threading round iron and pipe, electric motor and emery wheel; may also want lathe, shaper and shears; for electrically-operated machine shop.

**Machine Tools.**—See Foundry Equipment, etc.

**Machine Tools, etc.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Sept. 29 to furnish 2 hoisting and rotating electrical equipments for boat cranes, schedule 7281; one set plate bending rolls, motor-driven, to bend 1/4-in. plate to circle 8-in. diam., 60 in. long, schedule 7282; delivery Brooklyn, N. Y.; water filter and grease extractor, 6 in., twin or double-feed, spare cartridge and filter cloths, schedule 7282; delivery Philadelphia; two 600 and 2500-lb. drop hammers; machine for cutting

spruces and gates from steel castings, schedule 7294; 24-in. Universal shaping machine complete; right-hand sawmill, schedule 7285; delivery Washington, D. C.; 12x14-ft. inside portable oven, schedule 7293; delivery Norfolk, Va.; for schedules apply to navy pay office nearest navy-yard.

**Machine Tools, etc.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish two 5-ton hydraulic cranes, schedule 7297; 3 pipe-threading and cutting-off machines, schedule 7300; delivery Norfolk; 4 portable bench grinders and 4 valve-seating machines, schedule 7298; pipe-threading and cutting-off machine, schedule 7333; delivery Philadelphia; 8 vertical feed simplex pumps, schedule 7328; delivery Brooklyn; two I beam 5-ton travelers, schedule 7299; delivery New York; for schedules apply to navy pay office nearest navy-yard.

**Metal-working Machinery.**—Jordan Mfg. Co., Lumberton, N. C.—Prices on machinery for brass cutting, wood and iron sawing, etc., for manufacturing thermometers.

**Meters, etc.**—City Comms., St. Petersburg, Fla.—Bids until Sept. 21 for following commodities to be used in construction and operation of gas plant: 200 regular 5-A meters, 200 prepay 5-A meters, 10 regular 10-A meters, 10 prepay 10-A meters, 5 regular 30-A meters, all in tin case; 400 meter-cocks, 1 in.; 20 meter-cocks, 1 1/4 in.; 10 meter-cocks, 1 1/2 in., all lock pattern; 400 lead outlet meter connections, 1 in.; 20 lead outlet meter connections, 1 1/4 in.; specifications obtainable from W. F. Divine, City Clerk.

**Meters, etc.**—Prakia Oil & Gas Co., R. M. Pratt, Prest.-Mgr., Okmulgee, Okla.—Prices on meters and regulators for gas. (See Piping, etc.)

**Mill Supplies, etc.**—H. S. Johannsen, 50 Church St., New York.—Communications from manufacturers quoting prices, including protective commission, for specified territory on goods delivered f. a. s. steamer, New York, for export to Norway; cash in New York against ocean shipping documents; goods to cover mill supplies, tools, lubricating oils and greases, packing, picked waste, electrical machinery, etc.

**Mill Work.**—F. M. Williams, Pensacola, Fla.—Prices on mill work, sash, doors, etc.

**Moving-Picture Equipment.**—J. M. Dempsey, Conway, S. C.—Addresses of manufacturers of or dealers in moving-picture machines; also of good films or pictures.

**Oils and Greases.**—See Mill Supplies, etc.

**Overall Machinery, etc.**—J. E. Skinner, 30 St. James Bldg., Jacksonville, Fla.—Addresses of manufacturers of machinery for making overalls, shirts, etc.

**Packing.**—See Mill Supplies, etc.

**Paint.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish 250,000 lbs. Indian dry red, 20,000 lbs. Venetian dry red, 1200 lbs. sal ammoniac and 20,000 lbs. whitening in boxes, schedule 7320; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

**Partitions.**—Baptist Church, C. E. Franklin, Secy, Building Com., Pontotoc, Miss.—Prices on roller partitions for \$30,000 church building.

**Paving.**—Bluefield Colored Institute, Bluefield, W. Va.—Bids to construct cement walks.

**Paving.**—Town Comms., Passagrille, Fla.—Bids until Sept. 18 to lay sidewalks; Jas. Henry, Town Clerk.

**Paving.**—City, Julian Kendrick, Engr., Birmingham, Ala.—Bids until Sept. 15 to construct concrete sidewalks on Pike Ave., Ensley; about 1500 sq. yds.; cost \$1200.

**Paving.**—Ernest W. Thompson, Mayor, Tuskegee, Ala.—Bids Nov. 10 for street improvement; amount available, \$15,000.

**Paving, etc.**—Board of Affairs, J. F. Bedell, Prest., Charleston, W. Va.—Bids until Sept. 24 to curb and pave 24 streets; about 40,400 ft. curb and 68,300 sq. yds. paving; G. S. Brown, Loewenstein Bldg., City Engr.

**Paving, etc.**—Baltimore County Commissioners, Towson, Md.—Bids Sept. 24 to improve Eastern Ave. from city limits to 5th St.; 5250 ft. armored concrete curb, 49 sq. yds. wood block runners, 600 ft. headers, 962 sq. yds. brick gutter, 7570 sq. yds. paving and 300 sq. yds. cobble; amount available, \$18,000 to \$20,000; W. G. Suro, County Roads Engr., Towson.

**Peanut Machinery.**—H. W. Peterman, Mt. Pleasant, Tex.—Data and prices on equipment for peanut factory.



**Peanut Pickers.**—Wm. Walker Jones, 510 Tucker Bldg., Raleigh, N. C.—Catalogues and price lists of peanut pickers and threshers.

**Pickers (Fruit).**—F. R. Wilcox, Daytona, Fla.—To correspond with manufacturers prepared to manufacture a special fruit picker.

**Pipe.**—City Comms., St. Petersburg, Fla. Bids until Sept. 21 for following galvanized pipe to be used in construction and operation of gas plant: 25,000 ft. 1½-in., 3900 ft. 1½-in., 2500 ft. 2-in. and 2000 ft. 1-in.; about 5000 galvanized fittings; specifications obtainable at office W. F. Divine, City Clerk.

**Pipe (Iron).**—L. M. Jones, care Norfolk Southern R. R. Co., Norfolk, Va.—Six lengths 36-in. cast-iron pipe and six lengths 48-in. cast-iron pipe.

**Piping, etc.**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Oct. 6 to furnish 7000 lbs. brass pipe, schedule 7225; delivery Philadelphia; 4000 lbs. brass pipe, 1900 lbs. copper tubing, schedule 7325; delivery Charleston, S. C.; miscellaneous lot wrought pipe, schedule 7322; delivery Charleston, S. C.; for schedules apply to navy pay office nearest navy-yard.

**Piping, etc.**—Prakla Oil & Gas Co., R. M. Pratt, Prest.-Mgr., Okmulgee, Okla.—Prices on material for piping a town of 3000 population (about 2 mi.) with gas, including meters, tubing, regulators, etc.

**Plumbing.**—Dept. of Justice, Office of P. H. Duchay, Supt. of Prisons, Washington, D. C.—Bids until Sept. 30 to furnish and deliver at U. S. Penitentiary, Leavenworth, Kan., plumbing fixtures for east main cell wing, in accordance with specifications on file.

**Plumbing, Lighting, etc.**—Treasury Dept., Office of Supervising Archt., Washington, D. C.—Proposals until Sept. 21 for alterations in plumbing, lighting, etc., in the United States postoffice at Baton Rouge, La., in accordance with drawings and specification, copies of which may be had at above office or of custodian, Baton Rouge, La., at discretion of Supervising Archt., O. Wenderoth.

**Pumps.**—See Machine Tools, etc.

**Pump.**—Espiritu Santo Springs Co., Safety Harbor, Fla.—Pump or similar device to pump glass of water from spring when cent is dropped in slot; wants to correspond with manufacturers.

**Pumping Equipment.**—City of Newbern Water & Light Dept., Newbern, N. C.—Bids until Sept. 19 on following pumps: Boiler-feed pump, 12x7x12, outside end packed, brass fitted, single piston type; Goulds No. 5 type, belt-driven, rotary with capacity of 600 to 750 gals. per minute against 100 lbs. working pressure; F. T. Patterson, City Clerk.

**Portable Buildings.**—Frank K. Thomson, Masonic Temple Bldg., Raleigh, N. C.—Catalogues and prices on portable houses and school buildings.

**Reinforcing.**—Dept. of Justice, Office of F. H. Duchay, Supt. of Prisons, Washington, D. C.—Bids until Oct. 12 to furnish and deliver at U. S. Penitentiary, Atlanta, Ga., reinforcing material for roof of west main cell wing, in accordance with specifications on file.

**Refrigerators.**—See Vacuum Cleaning, etc.

**Road Construction.**—Harris County Comms., Houston, Tex.—Bids until Sept. 21 to pave Post Oak Rd., including hauling material, preparation of roadbed, grading, etc.; plans and specifications on file with County Engrs., from whom copies may be had; H. L. Washburn, County Auditor.

**Road Construction.**—Comms. Road Dist. No. 3 (S. M. Thomas, L. F. Holberg and N. Scales), Macon, Miss.—Bids until Sept. 26 to grade Columbus, DeKalb and Cooksville Rds.

**Road Construction.**—Buncombe County Comms., Asheville, N. C.—Bids until Oct. 17 to regrade and resurface Asheville to Weaverville Rd.; recommends top or wearing surface of bituminous macadam or 4-in. foundation; companies using amesite, tarvia, warrenite, brick and other special bituminous binders be asked to bid; Chas. H. Neal, County Engr.

**Road Construction.**—Calhoun County Comms., Pittsboro, Miss.—Bids until Oct. 6 to construct road from Pittsboro to eastern boundary line of Supvrs. Dist. No. 1 and road leading from there to Loosachoon River at crossing near Old Town; plans and specifications, etc., on file with Board of Supvrs.; A. A. Bruner and W. R. Byars, Highway Comms.

**Road Construction.**—Hays county, J. R. Wilhelm, Judge, Austin, Tex.—Bids about Oct. 20 to surface with gravel 24.6 mi. Austin-San Antonio highway; J. W. Janssen, Engr., San Marcos, Tex.

**Road Metal.**—Baltimore (Md.) Board of Awards.—Bids at office City Register, City Hall, until Sept. 23 to furnish road metal for road between city line and Providence, and along Road No. 3, adjacent to Jessup property, about ¼ mi. east of Bridge No. 1, improvement of Gunpowder supply, contract No. 33; specifications obtainable at office Robt. L. Clemmitt, Acting Water Engr., City Hall; charge of \$5 for each set of specifications.

**Road Rollers (Steam and Motor).**—Theodor Heyde, Tiflis, Caucasus.—Data (including description, operations, shipments, etc.) and prices on American steam and motor street rollers, especially 10-ton rollers.

**Roofing.**—See Building Materials.

**Roofing and Cornice.**—Walker D. Willis, Pensacola, Fla.—Prices on galvanized cornice and tar and gravel roofing.

**Sawmill.**—See Machine Tools, etc.

**Seating.**—Baptist Church, C. E. Franklin, Secy., Building Com., Pontotoc, Miss.—Prices on seating for \$20,000 church building.

**Sewers.**—See Water-works and Sewer System, J. H. Polhill, Clerk, Louisville, Ga.

**Sewers.**—City of Miami, Fla.—Bids until Oct. 15 to construct 18 mi. sanitary sewers, 8 to 24 in. in diam.; plans at office of B. H. Klyce, Engr., 52 Real Estate Bldg.

**Sewer Construction.**—City of Granger, Tex.—Bids until Sept. 22 to construct sanitary sewer system; plans on file with City Secy., or obtainable from Ehlers Engineering Co., Lagrange, Tex.; J. M. Schramm, Chrmn. Sewer Committee.

**Sewer Construction.**—City of San Antonio, Tex., Fred Fries, Clerk.—Bids until Oct. 5 (extended date) for sanitary sewers as follows: Section 24, 10,900 ft. 58 to 66-in.; section 25, 20,000 ft. 26 to 56-in.; section 26, 10,000 ft. 18 to 24-in.; section 27, 20,750 ft. 8 to 30-in.; plans and specifications at office City Engr.

**Sewing Machines.**—See Overall Machinery, etc.

**Shelves (Roller).**—St. Lucie County Comms., J. E. Fultz, Clerk, Fort Pierce, Fla.—Bids Oct. 6 for roller shelves to fit wall 10½ ft. high and 13½ ft. wide, books 13x18½ in.; space between rollers 3½ in., except one tier floor to ceiling, 2 in. space between rollers; also one separate tier roller shelves for books 20x29 in., between rollers 2½ in., about 15 books; describe base, top and finish.

**Shingles (Vulcanite).**—F. M. Williams, Pensacola, Fla.—Prices on vulcanite shingles.

**Skylight Construction.**—Tennessee Industrial Film Co., R. M. Shaw, Prest., Knoxville, Tenn.—Prices on skylight construction for \$8000 building.

**Slate.**—See Blackboards (Slate), Wm. F. Elder.

**Springs (Steel).**—Navy Dept., Bureau Supplies and Accounts, Saml. McGowan, Paymaster-Gen., Washington, D. C.—Bids Sept. 29 to furnish 876 steel springs, schedule 7274; delivery Washington, D. C.; for schedules apply to navy pay office nearest navy-yard.

**Test Borings.**—Treasury Dept., Office of Oscar Wenderoth, Supervising Archt., Washington, D. C.—Bids Sept. 21 to make test borings on site of U. S. Interior Dept. Bldg.; drawings and specifications at discretion of Archt.

**Testing Laboratories.**—Fred Fries, City Clerk, San Antonio, Tex.—Bids until Sept. 28 for inspecting and testing material to be used in constructing permanent paving for city.

**Thermometer Materials.**—Jordan Mfg. Co., Lumberton, N. C.—Wants prices on materials for thermometers and alarms; woodholders, glass tubes, electric wires, bulbs, bells, brass racks, pinions, brass sheets, etc.

**Tools.**—H. S. Johannsen, 59 Church St., New York.—Communications from manufacturers of tools for shipment to Norway. (See Mill Supplies, etc.)

**Twine.**—Postoffice Dept., Washington, D. C.—Sealed proposals at office of Purchasing Agent until Oct. 1 for furnishing 2,400,000 lbs. twine of jute or other material suitable for tying packages of letters and for tying devices to be used as substitute for twine as it may be required by postal service during term beginning Nov. 1, 1914, and ending Oct. 31, 1915; specification and blanks for proposals furnished upon application to Purchasing Agent, A. S. Burleson, Postmaster-General.

**Vacuum Cleaning, etc.**—Office of Supt. U. S. Capitol Building and Grounds, Washington, D. C.—Bids until Sept. 26 to install at Columbia Hospital for Women vacuum cleaning, refrigerators, kitchen, laundry and sterilizing equipment. Information on application.

**Water Heater.**—Bureau of Yards and Docks, H. R. Stanford, Chief, Navy Dept., Washington, D. C.—Bids until Oct. 3 to furnish and install feed-water heater at Naval Hospital, Las Animas, Col.; specifications obtainable on application to Bureau.

**Water-works and Sewer System.**—J. H. Polhill, Clerk, Louisville, Ga.—Receives bids to extend present water-works and construct sanitary sewer system; W. Hopson Goodloe, Consult. Engr., 302 American National Bank Bldg., Macon, Ga.

**Water-works, etc.**—Sewerage and Water Board, Geo. G. Earl, Gen. Supt., 508 City Hall Annex, New Orleans, La.—Bids until Nov. 4 for water extensions, sewer extensions, connections to sewers and connections to water mains; specifications with blank proposal forms furnished on application.

**Well-drilling Machinery.**—Investors' Sulphur & Oil Co., O. G. Spencer, V.-P., 923 Maison Blanche, New Orleans, La.—Bids about Dec. 15 for machinery to drill oil and sulphur wells.

**Wheel Press.**—See Foundry Equipment, etc.

**Woodworking Machinery.**—F. M. Spinks, Shubuta, Miss.—Catalogues and prices from manufacturers of woodworking machinery.

**Woodworking Machinery.**—Jordan Mfg. Co., Lumberton, N. C.—Prices on machinery for manufacturing wood parts of thermometers.

## FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters. Items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

### FINANCIAL CORPORATIONS

Ala., Birmingham.—C. D. Huffman Auditing Co. Incptd.; capital \$2000; organizers, C. D. Huffman, M. H. Huffman and E. J. Holt.

Ala., Five Points.—Bank of Five Points has begun business; capital \$15,000. R. W. Bowser is Prest.; E. S. Fuller, Cash.

Ark., Fort Smith.—City National Bank is chartered; capital \$100,000. I. H. Nakdimen is Prest. (Previously mentioned.)

Fla., Gainesville.—The Gainesville National Bank, which is a consolidation of the Dutton Bank and the Gainesville National Bank, is organized with \$200,000 capital and \$40,000 surplus. W. R. Thomas will be Prest.; F. M. Brannon, active V.-P. and Chrmn. of Board; G. K. Broome, W. R. Steckert, W. B. Taylor, T. W. Shands and J. B. Padgett, V.-P.'s.

Fla., Miami.—Commercial Financing Corp. Incptd.; capital \$10,000. Directors: Frank D. Hill, Henry M. Parker, G. D. Brossin and Chas. E. Garrahant. Business is to begin in October.

Ga., Clarkston.—Bank of Clarkston has made application for charter; capital \$25,000; Incptrs., Clem Jolly, G. S. Branyon and E. L. Waggoner of Clarkston, W. H. Rush of Decatur, and T. B. Aiken, Stone Mountain.

Ga., Dublin.—Southern Exchange Bank has made application for charter; capital \$50,000; incorporators, C. R. Williams, B. M. Lewis and others.

Ga., Savannah.—The Savannah Trust Co. has begun business; capital \$500,000; surplus \$150,000. This represents a merger of the Savannah Trust Co. and the Chatham Bank. Leopold Adler is Prest.; W. W. Mackall, Chrmn., Executive Committee; Fred W. Clarke, V.-P.; Harry C. Anderson, Secy.; John H. Calais, Asst. Secy. and Treas.; John J. Cornell.

Ky., Frankfort.—The Farmers' Deposit Bank, which represents a merger of the Deposit Bank and the Farmers' Bank, has begun business; capital \$175,000. John C. Noel is Prest. and Buford Hendrick, V.-P.

La., Gretna.—Kenner-Orleans Realty Co. has made application for charter; capital \$12,000. Organizers: L. H. Marrero, L. H. Marrero, Jr., W. F. Marrero and Paul Felix. La., Longstreet State Bank chartered; capital \$20,000; J. Rush Wimberly, Shreveport,

and J. L. Campbell, Cash., Longstreet, incorporators. Business began Aug. 30.

La., Shreveport.—Title Guaranty & Securities Co. of Louisiana, authorized capital \$1,000,000, Incptd. Directors: E. Wayles Browne, Prest.; J. W. Clark and B. F. Roberts, V.-P.'s; Percy N. Browne, Treas.; J. C. Boynton, Secy.; J. P. Honaker, C. O. Beauchamp and Sam Willer of Shreveport; Robert Roberts, Minden, La.; W. P. Head, Mansfield, La., and A. A. Lesuerer, Jr., St. Louis, Mo.

Miss., West.—Bank of West has filed charter of incorporation; capital \$10,000. Incorporators: W. O. Barrett and C. M. Purvis, Lexington; R. A. Cross, Stephen L. Burwell, J. A. Weeks, W. H. Andrews, C. E. White and others of West.

Mo., St. Joseph.—A new bank capitalized at \$100,000 is to be established at Sixth and Hickory streets; business is expected to begin about Jan. 1. Address John J. Downey, County Recorder.

N. C., Goldsborough.—Conversion of the Bank of Wayne into the Wayne National Bank is approved; capital \$25,000.

N. C., Lumberton.—National Bank of Lumberton chartered; capital \$100,000; A. W. McLean, Prest.; C. V. Brown, Cash. This is a conversion of the Bank of Lumberton. (Previously mentioned.)

N. C., Mebane.—Mebane Bank & Trust Co., authorized capital \$100,000, is chartered. Organizers: B. F. Warren and others.

Okla., Arcadia.—First National Bank of Arcadia chartered; capital \$25,000. A. H. Crabb, Prest.; J. A. Lynn, Cash.

Okla., Forum.—Bank of Commerce has made application to convert into the National Bank of Commerce; capital \$25,000.

S. C., Greenville.—People's Bank has made application to convert into the People's National Bank; capital \$200,000.

S. C., Greer.—The First National Bank, a conversion of the People's Bank, is Incptd.; capital \$25,000; surplus \$2000. Business is to begin about Nov. or Dec.

S. C., Saluda.—The Farmers' Bank will make application to convert into a national bank.

Tenn., Pulaski.—Farmers & Merchants' Bank of Giles county is chartered; capital \$12,000. Incptrs.: J. W. Halley, A. J. Clark, O. C. Walover, M. C. Summer, W. W. Collier and W. F. Sanders.

Tex., Avery.—First State Bank has made application to convert into the First National Bank; capital \$40,000.

Tex., Corpus Christi.—Born Investment Co. chartered; capital \$100,000; is to begin business immediately. E. A. Born, Prest.; E. R. Kleberg, V.-P., and Thos. C. Born, Secy.

Tex., Clarksville.—First State Bank has made application to convert into the City National Bank; capital \$125,000.

Tex., Cooper.—The Farmers' State Bank has made application to convert into the Farmers' National Bank; capital \$50,000.

Tex., Conroe.—A new bank is being organized by W. W. Woodson of the Central Texas National Bank, Waco.

Tex., Dallas.—Reliance Loan Co. chartered; capital \$50,000; incorporators, J. N. Swanson, B. Frankwood and S. T. Brannon.

Tex., Edgewood.—First State Bank has made application to convert into the First National Bank; capital \$25,000.

Tex., Honey Grove.—The conversion of the First State Bank into the State National Bank is approved; capital \$125,000.

Tex., Quitman.—First State Bank of Quitman has made application to convert into the First National Bank; capital \$50,000.

Tex., Newsome.—First State Bank has made application to convert into the First National Bank; capital \$25,000.

Va., Alexandria.—Interstate Service Corp. is organized with from \$4000 to \$15,000 capital to do a security business; A. G. Clapham, Prest., Washington, D. C.; Leo P. Herlow, Secy., Alexandria, Va.

Va., Norfolk.—Tilley-Creekmore Insurance Agency Incptd., capital \$100 to \$10,000; T. J. Creekmore, Prest.; T. C. Tilley, Secy.

Va., Lexington.—The Bank of Rockbridge has made application to convert into the Rockbridge National Bank; capital \$150,000.

Va., Wise.—Wise County National Bank is chartered; capital \$25,000; C. F. Bruce, Prest.; E. B. McElroy, Cash. This is a conversion of the Wise County Bank.

W. Va., Blacksville.—Dunkard Valley Bank has made application to convert into the First National Bank; capital \$25,000.

## NEW SECURITIES

Ala., Bay Minette.—An acceptable bid has been made for the purchase of the \$16,000 water, \$14,000 sewer and \$5,000 electric-light 5 per cent. 30-year bonds, but it will not be possible to complete the negotiations and to actually have the cash on hand by Sept. 30, time for receiving bids. W. D. Stapleton is Mayor.

Ala., Gadsden.—Election will be held in Etowah county Nov. 3 to vote on \$25,000 hospital and \$200,000 road bonds. Address County Commrs.

Ala., Georgiana.—Water-works bonds are voted. Address The Mayor.

Ala., Mobile.—Concerning the report that the Supervisors of Mobile county authorized a \$50,000 bond issue for Road Dist. No. 8, Fay McClure, County Highway Engr., says no bonds have been issued recently, and, as far as he knows, none are contemplated.

Ala., Tuskegee.—Bids will be opened Nov. 10 for \$15,000 5½ per cent. 20-year street-improvement bonds recently voted. Address E. W. Thompson, Mayor.

Fla., Auburndale.—\$15,000 5 per cent. bonds Auburndale special tax school Dist. No. 6, Polk county, will soon be placed on the market. Address County Supt. of Public Instruction, Bartow.

Fla., Arcadia.—Bids will be received until 2 P. M. Oct. 6 for \$350,000 of 6 per cent. 30-year bonds of Road and Bridge Dist. No. 5, De Soto county; denomination \$500. Address A. L. Durran, Clerk Circuit Court.

Fla., Fort Meade.—\$19,000 5 per cent. 15-30-year water-works bonds are reported sold. Address The Mayor.

Fla., Jacksonville.—Petitions are being circulated for the establishment of the enlarged school tax subdistrict No. 1, which comprises Jacksonville suburbs and nearby towns. Following the establishment of the new district steps will be taken to issue \$1,000,000 of bonds. Address Board of Public Instruction.

Fla., New Smyrna.—Ordinance is to be introduced in the City Council providing for an election to vote on \$60,000 water, sewer and paving bonds. Address The Mayor.

Fla., Ocala.—Election is to be held Oct. 27 to vote on \$380,000 municipal improvement bonds. Address The Mayor.

Fla., Ocala.—\$8000 5 per cent. 20-year \$1000 school district bonds were purchased Sept. 7 at 95 by the State of Florida as an investment for public school funds. J. H. Brinson, Secy. Board of Public Instruction, Marion county.

Fla., Palatka.—\$100,000 school-building bonds defeated.

Fla., Panama City.—\$30,000 5 per cent. 30-year bonds Panama City School Dist., Washington county, have been purchased by the State of Florida at 95 and interest.

Fla., St. Augustine.—Board of Public Instruction, St. John's county, will on Oct. 1 issue \$75,000 5½ per cent. 15-year warrants. L. A. Collee is Chrmn. of the Board.

Fla., Tarpon Springs.—\$80,000 of sewer, water, paving, city hall and jail bonds have been purchased by J. B. McCreary Co. of Atlanta.

Fla., Winterhaven.—\$40,000 Winterhaven School Dist., Polk county, bonds are voted. Address Board of School Trustees.

Ga., Hapeville.—\$29,000 water and \$14,000 sewer 5 per cent. 30-year \$1000 bonds were voted Sept. 7. Proceedings are being had to validate the bonds, after which they will be for sale. John D. Humphries is Mayor and J. M. Daniel, City Clk.

Ga., Hartwell.—\$13,000 sewer and \$33,000 water-works \$1000 bonds are voted. McAlpine Thornton is Mayor.

Ga., Hopewell.—\$14,000 sewer and \$29,000 water-works bonds are voted. Address The Mayor.

Ga., Lafayette.—Election is to be held to vote on sewerage bonds. Address The Mayor.

Ga., Lilly.—\$5000 6 per cent. 20-year bonds defeated; H. D. Royal, Mayor.

Ga., Quitman.—\$40,000 water and light and \$35,000 paving 5 per cent. 25-year bonds are voted. Address The Mayor.

Ga., Macon.—The election ordered for Aug. 19 to vote on \$1,000,000 road, \$250,000 bridge and \$150,000 hospital, Bibb county, bonds was called off. Address County Commrs.

Ga., Morgan.—The election ordered Sept. 26 to vote on \$100,000 Calhoun county road and bridge bonds has been called off on account of financial conditions in the South. Z. T. Rabun is Chrmn. Commrs. Calhoun county.

Ky., Corbin.—Election is to be held in Nov. to vote on \$15,000 of bonds for purchase of the Home Electric Light Co. Address The Mayor.

Ky., Hodgenville.—Bids will be received until 7:30 P. M. Sept. 26 for \$14,000 5 per cent. 5-20-year \$1000 water-works bonds voted Aug. 22, 1914; dated Sept. 26, 1914. Will M. Graham is City Clerk.

Ky., Maysville.—Election will be held Nov. 3 to vote on \$200,000 4 per cent. 5-20-year, \$250 to \$1000, Mason county road bonds. Address County Commrs.

Ky., Vanceburg.—Bids will be received until 1 P. M. Sept. 17 by Geo. T. William, County Treas., for \$25,000 of an issue of \$150,000 5 per cent. 5-year road-improvement bonds voted July 11; denomination \$100, \$500 and \$1000; dated Nov. 1, 1914.

La., Gretna.—Election is to be held in Jefferson parish Sept. 29 to vote on \$24,000 5 per cent. 40-year bonds Fourth Jefferson Drainage Dist. Address Board of Commrs., A. H. Ahten, Prest.

Md., Cumberland.—Local cities will, it is reported, be asked to subscribe to the \$150,000 4½ per cent. street-paving bonds, for which bids were recently opened but not sold; denominations, \$100, \$250 and \$1000; A. W. Straub, City Clerk.

Miss., Ashland.—\$8000 6 per cent. 20-year consolidated school district bonds have been sold. Address Board of Supervisors, Benton County.

Miss., Columbus.—Board of Supervisors of Lowndes County has ordered the issuing of \$50,000 highway-improvement bonds for Road Dist. No. 2. D. D. Stephenson, W. C. Gunter and T. J. Locke, Jr., Commrs. A petition for bonds in Mayhew Dist. No. 5 was received and filed for thirty days.

Miss., Ellisville.—Pleasant Lodge School Dist., Jones county, has voted \$2000 school-building bonds. Address Commrs. Jones county, Ellisville.

Miss., Jackson.—Bids will be received and opened on Oct. 5 for \$8000 6 per cent. bonds Forest Hill Consolidated School Dist., Hinds county. Address W. W. Downing, Clerk Board of Supervisors Hinds County. Further particulars will be found in the advertising columns.

Miss., McLaurin.—\$10,000 school district bonds are voted. Address School Board.

Miss., Meridian.—Election is to be held in Lauderdale county Nov. 3 to vote on \$50,000 road bonds. Address County Commrs.

Miss., Oxford.—Lafayette county has sold \$10,000 agricultural high-school improvement bonds. Address County Commrs.

Miss., Sherman.—Notice is given that town will issue \$10,000 of street bonds. J. Y. Wright is Mayor and W. A. Moore Clerk.

Miss., Starkville.—Election is to be held Sept. 25 to vote on \$130,000 Beat 1, Oktibbeha county, road bonds. Address Board of Supervisors.

Miss., Tunica.—Bids will be received until 11 A. M. Sept. 25 for \$12,000 6 per cent. 20-year \$500 water-works bonds. Morris J. Alexander is Town Clerk.

Mo., Elmo.—Election is to be held in Lincoln township, Nodaway county, Sept. 29 to vote on \$25,000 6 per cent. road bonds; dated Oct. 1, 1914. Address Town Commrs.

Mo., St. Joseph.—Steps are being taken to hold an election in Buchanan county to vote on \$150,000 bonds for new building on county farm. Address County Commrs.

Mo., St. Louis.—It is proposed to hold an election in November to vote on \$2,750,000 bridge bonds. Address The Mayor.

N. C., Shelby.—Commrs. of Cleveland County, O. E. Ford, Chrmn., have ordered an issue of \$25,000 6 per cent. additional bridge bonds.

Okla., Okemah.—\$25,000 additional water-works equipment bonds have been sold. Address The Mayor.

Okla., Hunter.—\$5000 6 per cent. 25-year town hall bonds are being offered. Address Town Commrs.

Okla., Tulsa.—Steps are being taken to hold an election in Tulsa county to vote on \$10,000 county farm bonds. Address County Commrs.

Okla., Yeager.—\$9000 Yeager School Dist. bonds are voted. Address A. A. Green.

S. C., Alligator Township (P. O. Columbia).—Bids will be received at any time for \$35,000 6 per cent. 40-year road bonds. Address E. J. Watson, Commr. of Agriculture, Columbia.

S. C., Cades.—Bids will be received at any time by Clk. School Dist. No. 25 for \$500 6 per cent. 30-year school bldg. bonds.

S. C., St. Matthews.—\$6000 5 per cent. bonds School Dist. No. 8 are voted. Address Board of Trustees.

Tenn., Covington.—\$45,000 30-year funding and \$25,000 25-year bridge Tipton county 5 per cent. bonds have been purchased at 101.71 by the Covington Savings Bank & Trust Co., Covington.

Tenn., Knoxville.—Bids will be received any time by R. A. Brown, Judge, Knox county, for \$100,000 5 per cent. 20-year school bonds.

Tenn., Trenton.—\$105,000 6 per cent. bonds Drainage Dist. No. 1, Gibson county, have been purchased at par by Tillotson & Wolcott Co., Cleveland.

Tenn., Trenton.—\$105,000 6 per cent. Gibson county bonds drainage Dist. No. 1 have been purchased at par by Tillotson & Wolcott Co., Cleveland.

Tenn., Wartburg.—Bids will be received until 11 A. M. Sept. 18 for \$270,000 5 per cent. 20-40-year Morgan county road bonds; dated July 1, 1914. This includes the \$50,000 for which bids were opened Aug. 24. Sherman T. Kimball is Secy. Finance Comm.

Tex., Austin.—The Attorney-General has approved the following securities: \$20,000 5 per cent. 15-40-year Floydada water-works bonds; \$1900 5 per cent. 5-40-year Lavaca county bridge-repair bonds; \$1200 5 per cent. 5-20-year bonds Leon county common school Dist. No. 37; \$15,000 5 per cent. 10-40-year bonds Carbon independent school Dist., Eastland county; \$7000 5 per cent. 10-40-year bonds Sandia independent school Dist., Jim Wells county; \$7000 5 per cent. 20-40-year bonds McCulloch county common school Dist. No. 11; \$1000 5 per cent. 10-20-year bonds Anderson county common school Dist. No. 27½; \$500 Dist. No. 19 and \$1500 Dist. No. 24, Angella county common school Dist., 5 per cent. 5-10-year bonds; \$2000 Dist. No. 124, \$1000 Dist. No. 88 5 per cent. 30-year Collin county school bonds; \$700 5 per cent. 10-20-year bonds Rusk county common school Dist. No. 37; \$2000 5 per cent. 5-20-year bonds Coleman county common school Dist. No. 11; \$1980 5 per cent. 5-20-year Mills county bridge repair bonds; \$8000 5 per cent. 10-40-year bonds Mabank independent school Dist., Kaufman county; \$500 5 per cent. 5-30-year bonds Middlebrian independent school Dist., Ellis county.

Tex., China Springs.—\$12,000 school bonds are voted. Address Board of Education.

Tex., Corpus Christi.—\$300,000 5 per cent. 20-40-year \$1000 water-works improvement bonds are now being offered. Roy Miller is Mayor.

Tex., Dallas.—Board of Education has asked the City Commrs. for authority to issue \$600,000 of bonds voted last April.

Tex., El Paso.—\$300,000 of school bonds have been purchased by the First National Bank of El Paso at a premium and accrued interest.

Tex., Houston.—Petitions are being circulated asking that an election be called to vote on \$300,000 bayou improvement bonds. Address The Mayor.

Tex., Houston.—Election is to be held Oct. 28 to vote on \$5,200,000 of 25-40-year 5 per cent. bonds as follows: Wharves, warehouses, etc., \$3,000,000; sewerage, \$1,000,000; storm drainage, \$1,000,000; schools, \$200,000. Ben Campbell is Mayor.

Tex., Houston.—A Chicago bond firm has purchased \$70,000 of Harris county school bonds, as follows: Dist. No. 20, including Harrisburg, \$50,000; Dist. No. 25, composed of Sunset Heights, Independence Heights and Brooke Smith addition, \$20,000.

Tex., Leonard.—\$11,000 5 per cent. 20-40-year independent school Dist. bonds have been purchased at par by Well, Roth & Co., Cincinnati.

Tex., Lufkin.—\$40,000 street, \$25,000 water-works and \$10,000 fire department 5 per cent. 40-year bonds are voted. C. N. Humason is Mayor.

Tex., Marble Falls.—\$45,000 water and electric-light plant bonds defeated.

Tex., Magnolia Park (P. O. Houston).—Election to vote on water-works and street-improvement bonds will be held about Oct. 15. Address W. J. McKenzie, R. F. D. No. 1, Houston.

Tex., Mount Pleasant.—Bids will be received until Oct. 13 for \$16,000 5 per cent. 40-year street-improvement bonds. B. B. Peterman is City Secy.

Tex., Oakville.—Election is to be held in Live Oak county Sept. 26 to vote on \$100,000 road bonds. Address County Commrs.

Tex., San Marcos.—Bids will be received at any time for \$50,000 5 per cent. 10-40-year \$1000 bonds Road Dist. No. 2, Hays county;

dated Feb. 16, 1914, payment beginning 1914. J. R. Wilhelm is County Judge.

Tex., Waco.—\$65,000 street-improvement, \$60,000 park, \$50,000 bridge, \$15,000 storm-sewer and \$10,000 sanitary-sewer 5 per cent. 30-year bonds have been purchased by the Sinking Fund. Address The Mayor.

Va., Bristol.—City has issued \$70,000 school and jail bonds. Address The Mayor.

Va., Pulaski.—Well, Roth & Co., Cincinnati, have purchased \$58,000 5-30-year school Dist., Pulaski county, bonds.

W. Va., Charleston.—\$465,000 street-improvement bonds are voted. Address The Mayor.

W. Va., Huntington.—Election will be held Sept. 19 to vote on \$125,000 city building, \$30,000 fire-fighting apparatus, \$25,000 police equipment 5 per cent. 30-year \$500 bonds. Floyd S. Chapman is Mayor.

W. Va., New Martinsville.—Bids will be received until 1:30 P. M. Oct. 1 by L. E. Lantz, Secy. County Commrs. Wetzel County, for \$50,000 5 per cent. 9-29-year Grant Road Dist., Wirtzel county, bonds; dated Dec. 1, 1913; maturity Dec. 1, 1943, optional after 1923.

W. Va., St. Mary's.—\$4000 of the \$12,000 5 per cent. 10-34-year water-works bonds recently offered were purchased at par by the First National Bank, St. Mary's.

## FINANCIAL NOTES

The Carolina Power & Light Co., including the Yadkin River Power Co. and the Asheville Power & Light Co., reports gross earnings during the year ended July 31, \$1,236,738, increase as compared with the previous year \$186,190; operating expenses \$634,477, increase \$92,151; net earnings \$592,261, increase \$94,039; balance after charges and dividends on preferred stock \$125,458, increase \$52,525.

A report from Decatur, Ala., says that the City National Bank and the Bank of Commerce will be consolidated under the name of the former, and that resources will be about \$750,000. Officers to be C. C. Harris, Prest.; A. E. Jackson, John L. Brock and John D. Wyker, V.-Ps.; W. B. Shackelford, Cashr., and J. Wm. Pole, Asst. Cashr. Mr. Harris is now president of the Bank of Commerce, and Mr. Shackelford is its cashier. Mr. Wyker is president of the City National Bank, and Mr. Jackson its cashier.

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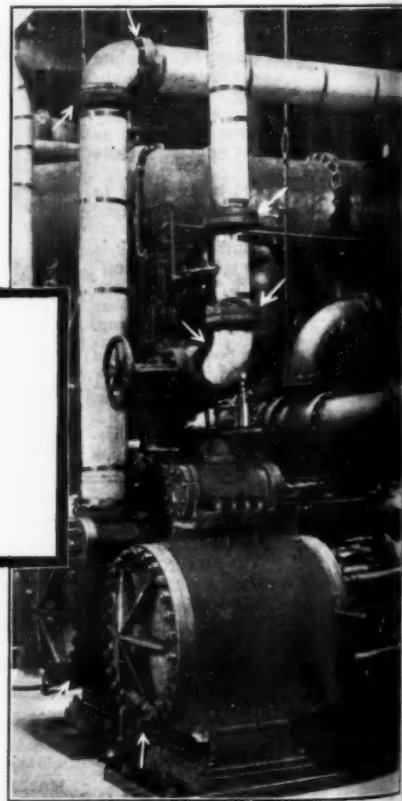
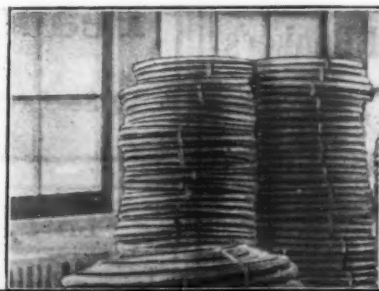
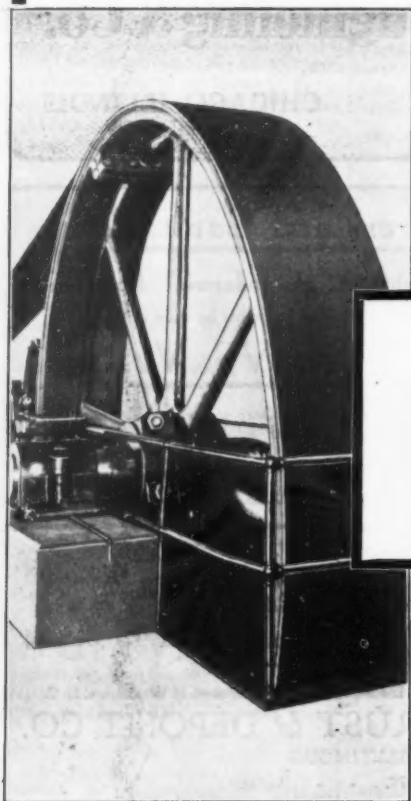
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In the mechanical goods sales departments of this company are 21 experts whose combined experience in this one field exceeds 126 years.

Co-operating with these men are master workmen who study actual working conditions before any new Goodyear product is made.

Step by step in the process of manufacture exacting inspections and tests are made to insure



**GOOD YEAR**  
AKRON, OHIO



# Standards

## Hose and Packings

the quality and service by which Goodyear products have won their way.

### Confer With These Men

Whatever your need in mechanical goods, whether belting, hose, packing or valves, there is just the very product in the Goodyear line.

Goodyear experts will be glad to confer with you and tell you of the Goodyear product you are seeking, and why it best meets your requirements every way. Asking for this advice costs you nothing—places you under no obligation. It means money saved to you through greater service rendered. It enables you to buy wisely the *first* time. It makes you independent of costly breakdowns and the replacing of equipment.

Buying this way is buying for SERVICE. And *maintained* service is what you seek in the operation of your plant. If service suffers, all suffers. And a dollar or two saved on first cost of inferior equipment multiplies itself into heavy loss when breakdowns occur.

Decide to investigate the Goodyear line. Drop a line today, stating your needs.

### The Goodyear Tire & Rubber Co.

Mechanical Goods Department

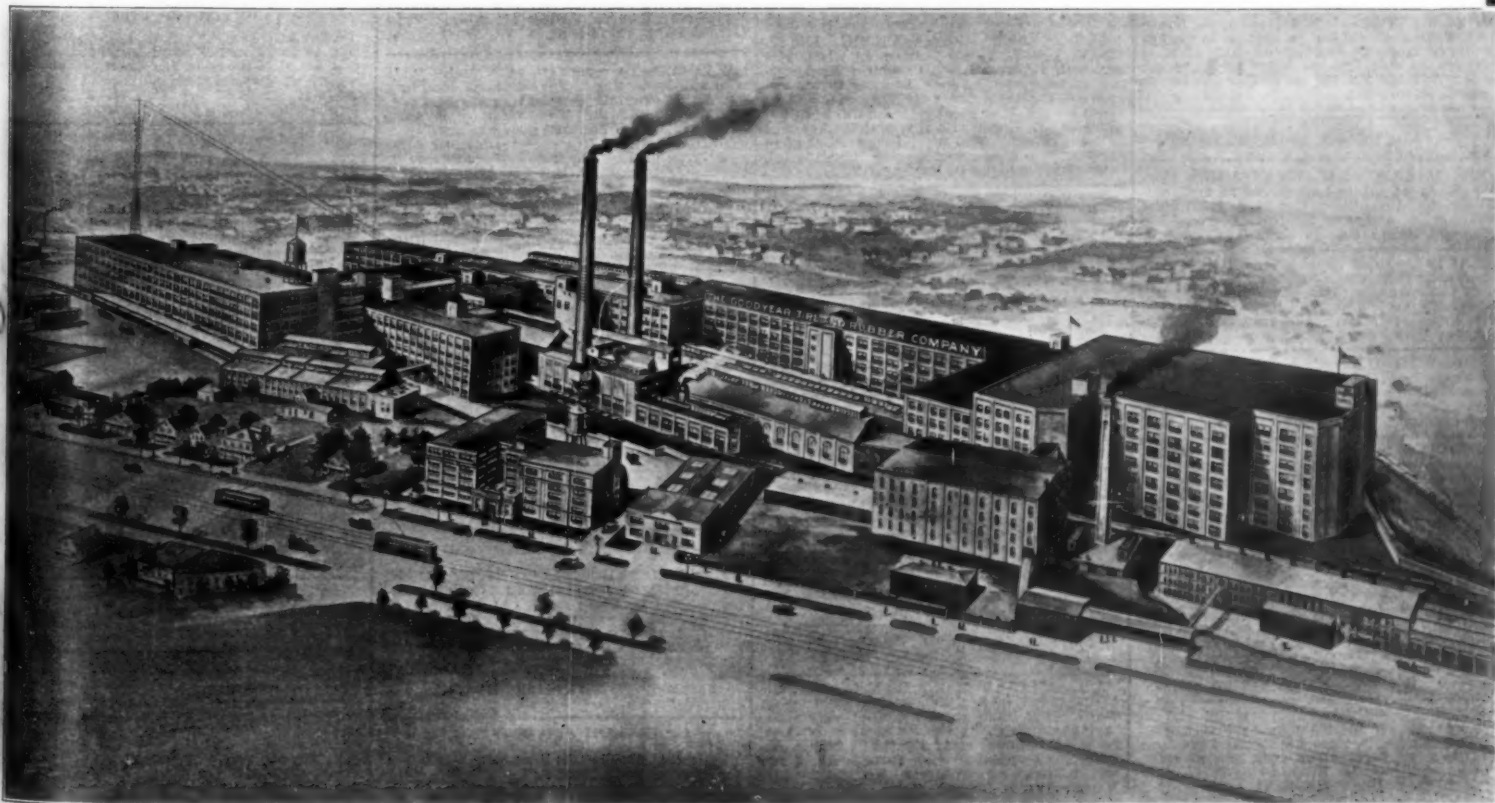
AKRON, OHIO

Toronto, Canada

London, England

Mexico City, Mexico

Write Us on Anything You Want in Rubber



# Classified Opportunities

## MEN WANTED

**UNDERSIGNED COUNSEL** will confidentially negotiate preliminaries for important executive, technical, administrative and professional positions insuring strictest privacy. Not an agency, but a highly-endorsed, high-grade method of negotiating preliminaries only, for \$3000 to \$12,000 men. Send address only for explanation. R. W. Bixby, Lock Box 134-E6, Buffalo, N. Y.

**AGENTS WANTED** on liberal commission to sell W. H. Trabue's manufacturers' label gumming machines. A machine weighing about 25 pounds, run by hand and motor power, for putting gums or paste on all kinds of manufactured labels. W. H. Trabue, 32 W. Eighty-third street, New York City.

**AGENTS WANTED** among supply dealers and salesmen for an exceptional house-lighting machine, suitable for small homes as well as large; simple, durable, economical; satisfaction guaranteed to customers; has excellent selling points; a live proposition. Write for terms. The Alexander N. Milburn Co., Baltimore, Md.

**I WOULD** like to hear from sales engineers and steam specialty salesmen who would be open to carry a well-known line on commission basis, devoting either entire time or as a side line; good money assured. H. F. Maurel, 604 W. 115th St., New York City.

**WANT A MAN**, thoroughly acquainted with cotton-gin machinery, in each of the cotton-producing States, to organize his State for the sale of our automatic press controller; costs ginner \$150; saves him \$50 per month. Christopher Press Controller Co., Granite, Okla.

**MEN WANTED.**—High-grade salesmen wanted to sell our patented specialties on a commission basis to stationary engineers throughout the South. An attractive proposition as a side line. Address M. G. Melvin Co., Inc., 114 Liberty St., New York City.

**WANTED.**—One or two district managers for Northern and Western territory, experienced in establishing and supervising agents to retail Florida lands. State experience and references. "Q," 196 Cardy St., Tampa, Fla.

**WANT A SUPERINTENDENT** for one of the best located and equipped woodworking plants in the South; must be thoroughly qualified and able to invest from \$1000 to \$4000 in stock. This is a gilt-edge proposition for the right man. Address No. 1607, care Manufacturers Record, Balto., Md.

**WANTED.**—To connect with an individual who will be willing to invest from \$15,000 to \$20,000 in a very successful foundry, manufacturing and general repair business in a good town of 12,000 in the best part of the mid-continent oil field, also conveniently located to the best coal mines in the Southwest. Address No. 1610, care Manufacturers Record, Balto., Md.

**WANTED.**—An experienced manager for machine, manufacturing and foundry business willing to invest from \$15,000 to \$25,000, located in a town of 12,000 in the best part of the mid-continent oil field, also located conveniently to the largest coal fields in the Southwest. Address No. 1611, care Manufacturers Record, Balto., Md.

**MEN WANTED.**—Automobile supply house desires salesmen calling on garage, hardware or livery trade to handle full line of auto supplies as side line on liberal commission basis. Address No. 1601, care Manufacturers Record, Balto., Md.

## AGENCIES WANTED

**ENGINEERING SALESMAN** desires position as agent for manufacturer in mechanical or building line; territory Baltimore, Washington and the South. Address No. 1612, care Manufacturers Record, Balto., Md.

**WANTED.**—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

**ATTENTION.** Manufacturers Steam Specialties: Want 1 or 2 additional accounts for Texas. High-grade services and personal solicitation by experienced salesman at minimum expense. H. W. Pring & Co., Dallas, Tex.

**A YOUNG MAN** with some experience as salesman desires the agency to represent in Baltimore or in Atlanta a house manufacturing some staple line of goods; highest references. Correspondence desired only with houses of highest standing. Address No. 1595, care Manufacturers Record, Balto., Md.

## SITUATIONS WANTED

**SUPERINTENDENT** or Manager—merchant or steel works blast furnaces anywhere. Technical graduate; wide experience operating and managing. Can perfect organization and produce good results. Address No. 1609, care of Mrs. Record, Balto.

**WANTED.**—Position as superintendent of quarry; 14 years' experience; young man with small family; am hustler and good organizer; can furnish the very best of references. Address M. B. Malone, P. O. Substation No. 2, Charlotte, N. C.

## RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 15c per line; 300 lines 16c per line; 500 lines or more, 15c per line.

**RODMAN** wants position; 1 year's experience, partly as inspector, now with railroad, 7 months on heavy construction; use both transit and level. Address No. 1613, care Manufacturers Record, Balto., Md.

**ACCOUNTANT.** Salesman, Purchasing Agent, 31, experienced manufacturing and building lines, desires position; five years last employer; small interest considered. Address No. 1614, care Manufacturers Record.

**BY EFFICIENCY ENGINEER**, vicinity of Baltimore, Md.; office and plant efficiency; member of Efficiency Society. Address No. 1615, care Manufacturers Record, Balto., Md.

**TECHNICAL AD.** and copy writer—3 1/2 years; M.E. graduate; engineering instructor 6 years; solid in theory and practice; age 30; \$3000. Address No. 1605, care Manufacturers Record, Balto., Md.

**WANTED.**—Position by young married man; ten years' experience as accountant; capable of handling credits and financial end of business; coal or lumber business preferred; can accept immediately. Address No. 1609, care Manufacturers Record, Balto., Md.

**BUILDING CONSTRUCTION ESTIMATOR** and general office man, 23 years old, will be idle September 10; only reasonable salary expected. Give me a chance. C. D. Crockett, care of Ragland-Baxter-Morford Co., Contrs., Nashville, Tenn.

**WOULD LIKE A POSITION** as representative of manufacturer of belting, steam goods or specialties for Baltimore city and State Maryland; references furnished; correspondence desired. Address No. 1602, care Manufacturers Record, Balto., Md.

**POSITION** as teacher of boys by young man who loves them with all his heart; five years' experience. Baxter Genoble, Pacolet, S. C.

**A COMPETENT SUPERINTENDENT** for building contractor or architect; 14 years' practical experience on all classes of building work; 5 years with the Government as superintendent of construction; technically trained; accustomed to office as well as field work; good draftsman, estimator and specification writer. Address No. 1608, care Manufacturers Record, Balto., Md.

## EDUCATIONAL

**RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.**—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

## DRAFTING

**PATENT OFFICE DRAWINGS:** accurate and prompt workmanship by experienced draftsman. Address T. D. Conn, 1115 Brentwood Ave., Baltimore, Md.

## MODELS

**MODELS MADE FOR INVENTORS.**—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

## EXCELSIOR MACHINES

**MONEY** in manufacturing excelsior; always market and highest price for the long-fiber dustless grades of excelsior manufactured by W. S. Minor Co., Northville, N. Y.

## BUSINESS OPPORTUNITIES

**A GOOD LIVE LAND MAN** to take one-half interest in the best selling contract on well-located lands in the South; very little capital required, as the business is well established; should clear \$100,000 in four years. References required and furnished. Write for particulars. Address No. 1604, care Manufacturers Record, Balto., Md.

**MANUFACTURER** of children's and women's wash dresses would like to correspond with reliable jobbing house for handling output. Address P. O. Box No. 472, Spartanburg, S. C.

**DESIGNING ENGINEER** wishes to get in touch with parties desirous of financing and building a Magnesia Carbonate and Pipe Covering Plant. Will consider either a salary or commission. Address No. 1597, care Manufacturers Record, Balto., Md.

**FOR A MACHINE** that will produce Dry Cold Refrigeration equal to 300 pounds of ice and upwards, and some ice, for your home, cafe, club, hotel, meat shop, etc., write Charles R. Fife Co., St. Louis, Mo.

**CLAY TRACT** of 41 acres on Tidewater & Western R. R. at crossing of county road about one mile from Bermuda on James River, known as Epps' Crossing. Tract has been tested over its entire surface, showing clay exists to the depth of 4 1/2 feet and covers entire property with overburden of 3 to 9 inches. The State Geologist reports as being the best found on the coastal plain, suitable for pipe, tile, pavers, fireproofing, and stiff-mud and dry-press face brick. Burns a dark cherry red, drying easily and safely.

This valuable clay bed, with a manufacturing site at Chester, for sale reasonable. The manufacturing site, consisting of between 3 and 4 acres, is on A. C. L. R. at junction of Tidewater & Western R. R., affording splendid shipping facilities to North or South by A. C. L. N. & W., S. A. L. T. & W., or by water. With proper development should prove a good money-maker. Full particulars upon request. Address Central Realty Co., Richmond, Va.

**STONECYPHER'S** Irish Potato-bug Killer destroys the potato beetle; no damage to plants; inexpensive; used in powder or solution; handled by best jobbers in South. Trade-mark registered. Sales in 1911, \$500; in 1914, \$5000. For sale or finance. J. H. Stonecypher, Owner, Westminster, S. C.

**I HAVE** apartments, hotels, business and investment properties everywhere to exchange for plantations, farms, timber, colonization and coal land. I have a deal for anything you have, anywhere. Also, fine farm and timber lands at lowest cash prices. Write me at once. Arthur M. Connor, 223-4 Oxford Bldg., 726 14th St. N. W., Wash., D. C.

**WANTED.**—To connect with individuals who will be willing to invest \$15,000 in a very successful graphite company in the best section in the South. The company is most successful in selling its product, and with additional capital can enjoy increased sales at a large profit. The best references can be given. Address P. O. Box 732, Atlanta, Ga.

**PARTY** with small capital desires negotiate with man of experience in toy manufacturing, etc., with view of establishing plant in splendid locality. Address No. 1606, care Manufacturers Record, Balto., Md.

## INDUSTRIES WANTED

### MISCELLANEOUS

**HENRIETTA, TEX.**, offers unlimited supply natural gas 4c. to manufacturers; fire brick, tile shales; water; low taxes; healthful; 3 railroads; unusual opportunity legitimate enterprises. Address Booster Club.

## INDUSTRIAL PLANTS FOR SALE

### GRIST MILL AND BRICK YARD

**A REAL BARGAIN.** COUNTRY GRIST MILL, with 108 acres of land. Building and machinery insured for \$2000; to close an estate, \$1800; cash takes all. Also, a fine brick yard, right on the James River; navigable water, new machinery, 100 acres of land, wharf on the property; also store and postoffice; only \$5000; easy terms. For particulars address, with stamp, Deverell & Co., Claremont, Va.

### LIGHT PLANT AND COTTON GIN

**FOR SALE.**—Electric-light plant and cotton gin; worth \$20,000; sell for \$15,000; third cash. J. McDade, Conroe, Texas.

## MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

**FOR SALE.**—Hardwood timber on 5000 acres of mountain land immediately on railroad; principally oak, chestnut, hemlock and poplar; pay for as cut and sold. Address North Carolina Talc & Mining Co., Hewitt, N. C.

**NO. 571—TIMBER TRACT—2100 ACRES.** Either timber right or in fee; actual timber area, 950 acres; timber over eight inches estimated to run over 15,000,000 feet; varieties, pine, oak, hickory, poplar, ash and walnut.

**Coal Land in West Virginia.**—Two small and several large tracts of proven quality. Orchards.—Two bearing orchards that will net 20 per cent. on the price asked for same. For particulars regarding these and other Virginia properties address Edward S. Wilder & Co., Charlottesville, Va.

### TOWNSITE

**FOR SALE.**—Alabama townsites, now scene of oil-boring activity; Semmes, Ala., on the railroad, 15 miles from Mobile; 300 acres; worth the price for townsites alone. J. L. Locke & Co., 107 Masonic Temple, Mobile, Ala.

### FULLERS EARTH AND KAOLIN

**FULLER'S EARTH AND KAOLIN.**—England and Germany at war; no more from there. We have deposits as good as any ever imported from these two countries. Now is your time. Southern Ins. & Realty Co., Ga. Casualty Bldg., Macon, Ga.

### IRON PYRITES MINE

**FOR SALE.**—Iron pyrites mine, located 20 miles from Atlanta, Ga., 2 miles from railroad; strictly high-grade and large vein. C. C. Houston, Lewisburg, Tennessee.

### COAL LAND FOR SALE

**COAL MINE.**—Working, San Antonio district; 2800 acres tested; 5-foot vein; hard coal; 55 per cent. fixed carbon; a rare bargain; must be sold quick; very easy terms. S. G. McWhorter, 615 Frost Building, San Antonio, Texas.

### COAL, OIL AND GAS LAND

**FOR SALE CHEAP IF SOLD AT ONCE.**—1500 acres coal, oil and gas land in the heart of the Clinchfield coal region on the new line of C. C. & O. Ry. in Southwest Virginia. If interested, write quick to W. H. P. Baker, Praise, Ky.

### MANGANESE ORE FOR SALE

**MANGANESE ORE FOR SALE.**—I wish to get in touch with factories and dealers in manganese. I have two or three deposits from which I can furnish ore of good quality at the price and contract will justify mining. M. M. Caldwell, Roanoke, Va.

### OIL LEASE

**VALUABLE OIL LEASE.**—For sale, or will take in partner for development, an oil lease of 75 acres. One small well now pumping. Sure of more wells. Full equipment. Address No. 1598, care of Manufacturers Record, Baltimore, Md.

### TIMBER FOR SALE

**FOR SALE.**—Seven hundred thousand feet pine, 10 to 36 inches, well bunched; stands on 80 acres; 6 miles R. R.; 4c. rate Norfolk; logging fine; quick sale will make sacrifice and sell for \$2.50 per M. W. A. Joyner, Branchville, Va.

**FOR SALE.**—40,000,000 feet of good timber, with sawmill and complete outfit; very low freight rates to Gulf ports; very cheap and on easy terms. James A. Terry, Mobile, Ala.

**FOR SALE.**—18,000,000 feet of timber, of which 10,000,000 is cypress, and as fine quality as grows in the South; balance good hardwood and pine. Will sell on stumpage basis to reliable manufacturers. Price \$4 per thousand. Address the People's Bank of

**TIMBER.**—3595 acres oak, hard maple, poplar, etc., in Webster Co., W. Va., 3 miles from railroad; estimate, 21,000,000 feet; reasonable terms; ample time to remove. Price \$60,000. John I. Carson, Washington, Pa.

### TIMBER LAND FOR SALE

**21,000 ACRES** on A. C. L. Ry. and navigable river; cruisers' estimate shows 90,000,000 feet short and long leaf pine, gum, cypress, poplar, etc.; logging easy. Johnson's A. & P. Real Estate Exchange, 926 Pennsylvania Ave. N. W., Washington, D. C.

**TIMBER TRACTS** located for manufacturers or investors by practical timbermen. Correspondence solicited. Jo A. Parker, Parma, Mo.

**5400 ACRES** of virgin hardwood timbered land in East Tennessee, \$10 per acre; would exchange. Farm Realty Co., 823 Jefferson Co. Bank Bldg., Birmingham, Ala.

### FARM AND TIMBER LANDS

**FOR SALE.**—About 20,000 acres of land in fee in Eastern North Carolina, in close proximity to railroad. This land contains about 60,000,000 feet of pine and cypress timber. The land without the timber is splendid for farming. With the timber off is worth the price asked for the whole. Timber, Box 1089, Norfolk, Va.



# Classified Opportunities

## FRUIT, FARM AND TRUCK LANDS

### COLORADO

FOR SALE—2000 acres land in cultivation under irrigation, good water rights, paid in full, located on Rio Grande River in Colorado; good farming community, close to good town, rich soil; will sell in tracts of 80 acres or more; also, good prairie and bottom lands in Oklahoma. Address Andrew Haley, No. 627 East 7th St., Oklahoma City, Oklahoma.

### FLORIDA

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homesteaders the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 800 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Beck, Palatka, Fla.

THREE MONTHS FREE.—Subscription to the Indian River Farmer. For truckers, fruit growers, general farmers, and folks who want to know about Florida. Address Indian River Farmer, Dept. "V-1," Bero, Fla.

LARGE BEARING ORANGE GROVE of 35 acres, 182 acres land, good 6-room dwelling, barn and tenant-houses; average annual crop 7500 crates; price \$50,000, half cash. H. B. Wordehoff, Plant City, Fla.

FOR SALE—Ideal citrus land, 40-acre tracts and up; in the proven district; high and healthy. Special inducements to parties of four or more. J. D. Clark, Bartow, Fla.

FOR SALE—50,000 acres in St. Lucie county, Florida; 20,000 acres in Manatee county; 30,000 acres in Lake county; 6240 acres in Polk county; all well located; excellent colonization tracts. Address P. F. Quinn, Vinton, Iowa.

### NORTH CAROLINA

FARM TWO MILES FROM WASHINGTON, N. C. FOR SALE—Four hundred acres; two hundred in high state of cultivation, level and well drained; eight-room house, large up-to-date barn, good water, plenty of stock and farming implements; fine tobacco land; will sell with growing crop; delivery can be made at any time; terms very easy. Jonathan Havens, Washington, N. C.

### TEXAS

FOR SALE AT ONCE—Well-improved alfalfa farm, 250 acres, adjoining Canyon, Texas, near Normal College; reduced from \$125 to \$72 per acre to secure \$10,630 cash; balance 4 years. Box 133, Canyon, Texas.

### VIRGINIA

BUY a good Virginia farm near Washington, D. C., where good markets take all dairy truck and poultry products. James A. Bethune, No. 8 The Westover, Washington, D. C.

## PATENTS AND INVENTIONS

INVENTIONS developed by practical manufacturers. We have designed and manufactured the simplest and most complicated devices. References furnished. Russell Machine Co., Live Oak St., Dallas, Texas.

### PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 4 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENT YOUR IDEAS.—\$9000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 975 F St., Washington, D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

VALUABLE INVENTIONS justify only best legal service. Consult Vernon E. Hodges, Attorney-at-Law, Barrister Bldg., Washington, D. C. Practice before the U. S. Supreme Court; all Circuit Courts; Courts of the District of Columbia, and the U. S. and Foreign Patent Offices exclusively. Continuous practice since 1886. Extensive experience with all classes of invention, representing lawyers, manufacturers and inventors in every State.

PATENT YOUR INVENTION.—Send sketch for free expert search and report as to patentability. Books on inventions and patents, and book of references from congressmen, manufacturers, bankers and inventors, sent free. John S. Duffie & Co., Patent Attys., 620 F St. N. W., Wash., D. C.

PATENTS.—Herbert Jenner, patent atty., and mechanical expert, 605 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

PATENTS THAT PROTECT.—Careful, honest work in every case. Patent your ideas; they may bring you wealth. 64-page book free. Fitzgerald & Co., 517 F street, Washington, D. C. Established 1873. Send for our book.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by an advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

# PROPOSALS

## BOND ISSUES

## BUILDINGS

## PAVING

## GOOD ROADS

### GOVERNMENT PROPOSALS

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C. September 2, 1914. Sealed proposals will be opened in this office at 3 P. M. September 30, 1914, for metal vault equipment for the stamp vaults, Internal Revenue Commissioner's Office, Auditors' Building (old Bureau of Engraving and Printing), Washington, D. C. Drawings and specifications may be obtained at this office, in the discretion of the Supervising Architect. O. WENDEBOTH, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C. September 2, 1914. Sealed proposals will be opened in this office at 3 P. M. October 14, 1914, for the construction, complete (including mechanical equipment, lighting fixtures, and approaches), of the United States post-office at Jellico, Tenn. Two-story-and-base-mechanical building; ground area, 4000 square feet; fireproof except roof; brick and stone facing; composition roof. Drawings and specifications may be obtained from the custodian of the site at Jellico, Tenn., or at this office, in the discretion of the Supervising Architect. O. WENDEBOTH, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C. September 1, 1914. Sealed proposals will be opened in this office at 3 P. M. on October 13, 1914, for the construction (including the mechanical equipment, interior lighting fixtures, and approaches) of a one-story, basement and mezzanine stone and brick faced building of 3600 square feet ground area, fireproof construction (except the roof) and composition roof, for the United States post-office at Shelbyville, Tennessee. Drawings and specifications may be obtained from the custodian of the site at Shelbyville, Tennessee, or at this office, in the discretion of the Supervising Architect. O. WENDEBOTH, Supervising Architect.

DEPARTMENT OF THE INTERIOR, Washington, D. C., September 3, 1914. Sealed proposals in duplicate will be received at this Department until 2 o'clock P. M. Tuesday, September 22, 1914, for the furnishing and installing of new skylights on the Patent Office Building, Washington, D. C., in accordance with plans and specifications for the work, copies of which may be obtained on application to the chief clerk of the Department. The right is reserved to reject any and all bids, or to accept or reject any part thereof, in the discretion of the Department. Proposals should be securely enveloped, marked "Proposal for Skylights, Patent Office Building," and addressed to the Secretary of the Interior. BO SWEENEY, Assistant Secretary.

OFFICE OF SUPERINTENDENT U. S. CAPITOL BUILDING AND GROUNDS, WASHINGTON, D. C. Proposals in duplicate, will be received and publicly opened at the above office on the 26th day of September, 1914, at twelve o'clock noon, for the installation at Columbia Hospital for Women, Pennsylvania avenue, between 24th and 25th streets N. W., Washington, D. C., of Vacuum Cleaning Equipment, Refrigeration, Kitchen Equipment, Laundry Equipment, and Sterilizing Equipment. Intending bidders desiring plans and specifications will make inquiry at the above office, stating what items they intend to bid on. The right is reserved to reject any or all bids and to waive any technicality in any bid. E. L. LOTT WOODS, Superintendent U. S. Capitol Building and Grounds.

## PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

### THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

U. S. ENGINEER OFFICE, Wilmington, N. C., August 29, 1914. Sealed proposals for construction of the motor survey boat Neuse will be received at this office until 12 o'clock noon, September 28, 1914, and then publicly opened. Information on application. H. W. STICKLE, Maj., Engrs.

### BOND OFFERINGS

### Bonds For Sale

Rockville, Md.

The County Commissioners of Montgomery County, Maryland, will receive sealed bids for the purchase of 22 Montgomery County bonds of \$500 each up to 12 o'clock noon on the 29th day of September, A. D. 1914, at which time the bids will be opened by said Commissioners and the sale consummated to the highest bidder for cash, if in the opinion of the said County Commissioners such highest bid be an adequate price for said bonds.

These bonds are in a series of 22 bonds of \$500 each, aggregating \$11,000, and numbered from one to twenty-two, both inclusive, and two of said bonds, being numbered one and two, both being payable one year after the date thereof, and two of said bonds, in order of their numbers, being payable each year until the entire issue of twenty-two is fully paid.

These bonds bear interest at the rate of 5 per centum per annum, said interest being payable semi-annually on the 1st day of August and the 1st day of February in each year until the payment of the principal sum.

The principal and interest being payable at the Farmers' Banking & Trust Company of Montgomery County, at Rockville, Maryland.

Each bid must be accompanied with a certified check for \$200, made payable to the County Commissioners of Montgomery County, Maryland.

RICHARD T. WHITE, JR., President Board of County Commissioners for Montgomery County, Maryland.

BERRY E. CLARK, Clerk Board of County Commissioners for Montgomery County, Maryland.

JOHN A. GARRETT, Solicitor.

### Water-Works Bonds

TOWN OF HODGENVILLE, KENTUCKY.

\$14,000 issued in \$1000 bonds. Two due in five, three in ten, four in fifteen, and five in twenty years. 5 per cent. interest, payable semi-annually. Bids close Sept. 25. Town reserves right to reject bids. For particulars address

WILL M. GRAHAM, City Clerk, Hodgenville, Kentucky.

### Bonds For Sale

Rockville, Md.

The County Commissioners for Montgomery County, Maryland, will receive sealed bids for the purchase of thirty (30) Montgomery County bonds of \$500 each up to twelve o'clock noon on the 29th day of September, A. D. 1914, at which time the bids will be opened by said Commissioners and the sale consummated to the highest bidder for cash, if in the opinion of the said County Commissioners said highest bid be an adequate price for said bonds.

These bonds are in a series of thirty (30) bonds of five hundred (\$500) dollars each, aggregating fifteen thousand (\$15,000) dollars and numbered from one (1) to thirty (30), both inclusive, and two of said bonds, being No. 1 and No. 2, being payable one year from date thereof, and two of said bonds, in order of their numbers, being payable each year until the entire issue of thirty (30) is fully paid.

These bonds bear interest at the rate of five per centum per annum, said interest being payable semi-annually on the 1st day of August and the 1st day of February in each year until the payment of the principal sum.

The principal and interest being payable at the Farmers' Banking & Trust Company of Montgomery County, at Rockville, Maryland. Each bid must be accompanied with a certified check made payable to the County Commissioners of Montgomery County.

RICHARD T. WHITE, JR., President Board of County Commissioners for Montgomery County, Maryland.

BERRY E. CLARK, Clerk Board of County Commissioners for Montgomery County, Maryland.

JOHN A. GARRETT, Solicitor.

### Bonds For Sale

Bids will be received by the County Commissioners of Warren County until Monday, October 5, 1914, at 12 o'clock M., for the purchase of \$20,000 of Nutbush township road bonds. These bonds will be in denomination \$1000 and will run for 40 years. Rate interest 5 per cent., payable semi-annually at County Treasurer's office, located at the Courthouse in the town of Warrenton, N. C. No bids will be considered unless accompanied by certified check \$200, payable to Chairman, Board of Commissioners. The Commissioners reserve the right to reject any and all bids. For further information address

P. M. STALLINGS, Chairman, Macon, N. C.

### 6% Bonds For Sale

Notice is hereby given that sealed bids will be received and opened on the first Monday in October, 1914, at the regular October, 1914, meeting of the Board of Supervisors of Hinds County, in Jackson, Mississippi, for the sale of \$8000 of bonds of the Forest Hill Consolidated School District, bearing six per cent. interest, semi-annually. The bonds will not be sold for less than their face value. The bonds will bear date October 1, 1914. All bids must be accompanied by a certified check in the amount of five per cent. of the bid, the same to be forfeited upon failure to comply with the terms of the bid.

Address all communications to Clerk.

W. W. DOWNING,

Clerk of the Board of Supervisors of Hinds County, Jackson, Mississippi.

### Sale of Road and Bridge Bonds

Notice is hereby given that the Board of County Commissioners of the County of DeSoto, Florida, will receive sealed bids at the office of the Clerk of the Circuit Court, Arcadia, Florida, until 2 o'clock P. M. on the 6th day of October, A. D. 1914, for the purchase of bonds of Special Road and Bridge District No. 5, authorized and issued by the said Board of County Commissioners for the said Special Road and Bridge District No. 5 in the sum of three hundred and fifty thousand dollars.

The entire bond issue of three hundred and fifty thousand dollars, coupon form, is hereby offered for sale; the same are issued in denominations of five hundred dollars, each bearing date of the first day of October, A. D. 1914, maturing thirty years after date, bearing coupon form interest at the rate of six per cent. per annum, interest payable semi-annually, and interest and principal payable at Arcadia, DeSoto county, Florida.

The said Board of County Commissioners reserves the right to sell the whole or any part of the said bond issue and also to reject any and all bids.

Each bidder is required to furnish certified check for 2 per cent. of his bid as evidence of good faith. The said checks of unsuccessful bidders will be returned, and the checks of the successful bidder will be forfeited in case he fails to comply with his bid. Each bidder will state the time when he will comply with his bid by paying money or other evidences thereof.

A. L. DURRANCE, Clerk of Circuit Court.

[CONTINUED ON NEXT PAGE.]



# PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

## BOND OFFERINGS

## 6% Bonds For Sale

Notice is hereby given that sealed bids will be received and opened on the first Monday in October, 1914, meeting of the Board of Supervisors of Hinds County, in Jackson, Mississippi, for the sale of \$8000 of bonds of the Byram Consolidated School District, bearing six per cent. interest, semi-annually. The said bonds will not be sold for less than their face value. The bonds will bear date October 1, 1914. All bids must be accompanied by a certified check in the amount of five per cent. of the bid, payable to Hinds County, the same to be forfeited upon failure to comply with the terms of the bid.

Address all communications to Clerk.  
W. W. DOWNING,  
Clerk of the Board of Supervisors of Hinds County, Jackson, Miss.

## DRAINAGE

## Drainage Canals

## NOTICE TO CONTRACTORS.

On Tuesday, October 6, 1914, at the Court-house in Selmer, Tenn., contracts will be awarded to the lowest responsible bidder for the construction of drainage canals in Huggins Creek, Sheffields Creek, Lick Creek and Billy's Creek bottoms; said Huggins Creek being the main creek and the other creeks the tributaries or laterals thereto; all in the northern portion of McNairy county, Tenn.

## Approximate Specifications.

Engineer's report, map, profile, etc., on file in the County Court Clerk's office at Selmer, Tenn.

Total length Huggins Creek is five and eighty-seven hundredths miles. Average width at top 20 feet; at bottom, 13½ feet. Average depth, 7 feet.

Total length of Billy's Creek, two and five-tenths miles. Average width at top, 13 feet; at bottom, 12 feet. Average depth, 6 feet.

Sheffields Creek, total length, two miles. Average width at top, 8 feet; at bottom, 4 feet. Average depth, 4 feet.

Total length of Lick Creek, nine-seven hundredths of one mile. Average width at top, 8 feet; at bottom, 4 feet. Average depth, 4 feet.

Clearing of right of way to be included. Work to begin November 2, 1914; completion within nine months.

Ten per centum deposited with Frank Deaton, Treasurer, Finger, Tenn., with each bid, either cash or certified check.

Right to reject any and all bids reserved. Eighty per centum of proportion earned to be paid monthly, balance when work completed.

Bids in writing, either sealed or open, received and filed any time. Further particulars will be given on application to either.

FRANK DEATON, Sec.,  
Finger, Tenn.

Or GEO. A. PRATHER, Chm.,  
Selmer, Tenn.

## Drainage Contract To Let

The undersigned will receive sealed bids until noon October 1, 1914, for contract to clear right of way two hundred feet wide and dig drainage canal 14.95 miles long in Madison county, Tennessee; also for clearing rights of way for five small laterals one hundred feet wide and excavating same. A total of about 842,854 cubic yards of earth to be removed.

Maps and profiles can be seen and data obtained on application. Address A. W. Stovall, Chairman, Jackson, Tennessee.

## Drainage Work

Sealed bids will be received at the Court-house, Salisbury, N. C., by the Boards of Drainage Commissioners for Kerr and Sills Creeks Drainage Districts, Rowan county, N. C., on Saturday, October 3, 1914, at 10 o'clock A. M., for removing 339,178 yards material and other work necessary to drain Kerr and Sills Creeks, estimated cost \$25,500.

Plans and specifications on file in Clerk's office, Salisbury, N. C. Bids received on each creek separately and as a whole. Certified check for \$200 on Kerr Creek and \$300 on Sills Creek required. The right to reject any and all bids reserved.

C. M. MILLER, Engineer and Supt.,  
Salisbury, N. C.

## BRIDGES

## Eighteen Bridges

## NOTICE TO CONTRACTORS.

Newton, Miss.

The Board of Supervisors of Newton County, Mississippi, will on Monday, the 5th day of October, 1914, let the contract for building eighteen bridges in District Number Four of Newton county, over streams on the roads known as the Newton-Lawrence and Roberts road, Tanglewood Extension, Lake-Hazel, and Newton and Gardenville road. The total length of all of said bridges being 1600 feet, more or less. To be constructed of A-1 creosoted timbers, in accordance with the plans and specifications now on file in the office of the Clerk of the Board of Supervisors of said county. Sealed bids will be received by the Clerk of said Board at Decatur, Mississippi, until noon the 5th day of October, 1914. All bids

must be accompanied by an unconditional certified or cashier's check on some Mississippi bank, payable to the President of the Board of Supervisors of said county, in the sum of \$1000. The contract for the building of said bridges will be awarded to the lowest bidder, who will enter into contract to perform said work and enter into bond in a sum equal to the amount of his bid, said bond to be approved by the President of said Board. But the Board reserves right to reject any or all bids. All of said bridges to be completed within sixty days from date of contract.

This the 9th day of September, 1914.

C. M. WELLS,  
Clerk of Board of Supervisors.

## Notice to Bridge Contractors

Chattanooga, Tenn., August 31, 1914.

Sealed proposals directed to the undersigned, and endorsed on the outside of the envelope "Market Street Bridge Bid," will be received at the office of the County Judge, County Courthouse, until 10 A. M. October 22, 1914, for the construction of a bridge at Market street across the Tennessee River at Chattanooga, Tennessee. The bridge will be fifty (50) ft. in width by approximately 2050 ft. in length, and will consist of—

(a) Nine (9) reinforced concrete girder spans, forty (40) ft. each.

(b) Two (2) reinforced concrete arches, each one hundred and sixty-five (165) ft. span.

(c) Four (4) reinforced concrete arches, each one hundred and eighty (180) ft. span.

(d) One (1) three hundred (300) ft. steel span of the Scherzer Rolling Lift Double-Leaf Bascule Type.

Bids for the construction of the above bridge will be asked for as follows:

(a) On the masonry and the concrete portion of the bridge complete.

(b) On the steel portion of the Scherzer Rolling Lift Double-Leaf Bascule complete, with machinery installed and ready for use.

(c) Same as (b), except the machinery omitted.

(d) On the masonry and reinforced concrete and steel portion of the bridge, including the Scherzer Rolling Lift Double-Leaf Bascule complete.

The Tennessee River Bridge Committee reserves the right to let the reinforced concrete portion and the steel portion separately or to let the entire work to the lowest responsible bidder on his bid for the construction of the bridge complete.

The bonds for the construction of the above-mentioned bridge at Market street, amounting to five hundred thousand (\$500,000) dollars, have been issued and sold at a premium. The entire proceeds of the bond sale have been deposited in local banks, and is available for expenditure on the construction of this bridge.

Blank forms for proposals, contract and bonds, plans and specifications can be seen at the office of the County Engineer, County Courthouse, Chattanooga, Tennessee, and will be furnished on application on or after September 28, 1914, at the office of Mr. B. H. Davis, Consulting Engineer, Whitehall Bldg., New York City, N. Y. Said application, however, shall be accompanied by a deposit of fifty (\$50) dollars, which will be required for each set of plans and specifications for the masonry or reinforced concrete portion of the bridge, and twenty-five (\$25) dollars, which will also be required for each set of plans and specifications of the steel portion of the bridge, i. e., Scherzer Rolling Lift Double-Leaf Bascule.

The above deposits for plans and specifications will be returned to all contractors submitting a bid, upon the return of the above-mentioned plans and specifications. The successful contractor will be required to execute an approved surety company bond for sixty (60) per cent. of the estimated value of the work as determined from the bids, to assure the faithful performance of the contract, and the payment for all labor and material which may be used therein. Monthly estimates will be used for the work done and of materials of construction delivered at site of bridge when accompanied by receipts showing the contractor has paid for this material, and ninety (90) per cent. of such estimates will be paid to the contractor on the 10th of each and every month.

Core borings have been taken at all piers and abutments, and contractors are respectfully urged to examine the cores and samples of materials to be excavated and to familiarize themselves with the site and local conditions before submitting their proposals.

The right is reserved to reject any and all bids.

## TENNESSEE RIVER

## BRIDGE COMMITTEE.

Theo. F. King, Chairman;

L. B. Bryan, Secretary;

J. B. Ragon,

W. Cummins,

H. F. Lawrence.

## WATERWORKS AND SEWERS

## Sewers

Miami, Fla.

Sealed bids will be received by the Mayor and City Council of Miami, Florida, until 7.30 P. M. October 15, 1914, for the construction of approximately 13 miles of sanitary sewers, 8 inches to 24 inches in diameter. Plans may be seen at the office of the Engineer, 52 Real Estate Building, Miami, Fla., and specifications secured from him about September 28.

B. H. KLYCE, Engineer.

## Sanitary Sewers and Water-Works Extension

Louisville, Ga.

Sealed proposals addressed to Capt. J. H. Polhill, City Clerk, Louisville, Ga., and marked "Proposal for Sanitary Sewers and Water-works Extension," will be received until 12 noon October 6, 1914, for the furnishing of all labor and equipment for the construction of a sanitary sewerage system and extensions to the present water-works system. Plans, profiles and specifications may be examined at the office of the City Clerk at Louisville, Ga., or at the office of the Consulting Engineer at Macon, Ga. A deposit of \$10 will be required on each set of plans, to be refunded when plans are returned in good condition. All proposals are to be made upon form furnished by the City Clerk, and must be accompanied with a certified check to the amount of five (5%) per cent. of the bid as evidence of good faith on the part of the bidder. The City of Louisville reserves the right to reject any and all bids or to accept any that may appear to be best for the City of Louisville.

CITY OF LOUISVILLE.

Capt. J. H. Polhill, City Clerk.  
W. HOPSON GOODLOE,  
Consulting Engineer, for Mallory  
Mill Supply Co., Macon, Ga.

## Postponement of Opening Bids

## NOTICE TO CONTRACTORS.

San Antonio, Tex., September 10, 1914. Prospective bidders are hereby advised that the time for receiving bids for Sewer Construction, previously limited to 4 o'clock P. M. September 21, 1914, has been extended by the City Council to 4 o'clock P. M. of October 5, 1914, in accordance with which sealed bids will be received by the undersigned until 4 o'clock P. M. October 5, 1914, for the construction of Sanitary Sewers in approximate quantities and dimensions as follows, to wit:

Section 24—10,900' from 58" to 66".

Section 25—20,000' from 26" to 56".

Section 26—10,000' from 18" to 24".

Section 27—20,750' from 8" to 30".

All in accordance with plans and under the provisions of specifications to be seen in the office of the City Engineer after September 10, 1914.

The City of San Antonio reserves the right to reject any and all bids.

FRED FRIES,  
City Clerk.

## BUILDINGS

## Court House

## NOTICE TO CONTRACTORS.

West Palm Beach, Fla.

Sealed bids will be received by the Board of County Commissioners of Palm Beach County, Florida, at the Clerk's office at West Palm Beach, Florida, up to 12 o'clock noon of October 6, 1914, for furnishing all material and labor for the construction of a courthouse at West Palm Beach, Florida, as per plans and specifications on file in the office of the Architect, W. B. Talley, 315 St. James Building, Jacksonville, Florida.

Copies of plans and specifications may be obtained from the office of the Architect upon a deposit with him of \$25, the amount of deposit to be returned to contractor when plans are returned to the architect in an undamaged condition, after contractor shall have made a bona-fide bid on the work.

Each bidder shall deposit with his bid a certified check made payable to the order of the Board of County Commissioners of Palm Beach County for two per cent. of the amount of his bid, as a guarantee that the bidder, if awarded the contract, will enter into contract for the construction of said building, and the completion of his contract, according to the plans and specifications prepared therefor, and give satisfactory bond for the amount named in the specifications.

Bidders are required to state the time necessary for completing the contract. The Board reserves the right to reject any or all bids.

By order of the Board of County Commissioners.

[Seal  
Co. Comm.] R. H. ROUSSEAU,  
Chairman.  
Attest—  
GEO. O. BUTLER, Clerk.

## Auditorium

## NOTICE TO CONTRACTORS.

Notice is hereby given that the undersigned State Board of Control of West Virginia will, until noon on the 8th day of October, 1914, receive sealed bids for furnishing all materials and labor necessary to erect and complete, in connection with the main Concord School Building at Athens, W. Va., an Auditorium with basement for heating plant, and a two-story-and-basement right wing, to be erected on the grounds of said school. The material shall be of brick and reinforced concrete, making them fire-proof.

Contractors can secure plans and specifications by addressing the office of the State Board of Control, Charleston, W. Va., and plans will be on file at the office of Concord Normal School, Athens, W. Va.

All bids must be sealed, plainly addressed to the "State Board of Control, Charleston, W. Va.," and marked in a conspicuous place on the envelope, "Bid for work at Athens." The bid must be accompanied by a certified check for five hundred dollars (\$500). Checks of unsuccessful bidders will be returned when contract is awarded, and check of

successful bidder will be held until proper contract and bond have been executed, upon failure of bidder to execute which his check will be retained by the State Board of Control to cover expenses of readvertising and reletting.

Immediately after contract is awarded the successful bidder will be required to execute a proper contract with guaranty company bond in a penalty equal to the amount of the contract price, said bond to be conditioned for the construction and completion of the work as set forth in the plans and specifications, same to be completed by Aug. 1, 1915.

All bids must be made on forms filed with the specifications, and which will, on request, be mailed to any bidder. The State Board of Control reserves the right to reject any and all bids.

STATE BOARD OF CONTROL.  
By J. S. LAKIN,  
President.

## MISCELLANEOUS

## Purchase of Sludge

OFFICE OF THE SEWERAGE COMMISSION OF THE CITY OF BALTIMORE. ADVERTISEMENT OF CONTRACT FOR THE PURCHASE OF SLUDGE AT THE BACK RIVER DISPOSAL PLANT.

Baltimore, September 5, 1914.

Sealed proposals, indorsed "Proposal for the purchase of Sludge produced at the Back River Disposal Plant," addressed to the Board of Awards of Baltimore City, will be received at the office of the City Register, City Hall, Baltimore, Md., until 11 A. M. Wednesday, September 23, 1914, for the purchase of all or any part of the sludge produced at the Back River Disposal Plant from the date of the contract to December 31, 1918.

Specifications can be obtained upon application at the office of the Sewerage Commission, Room 904 American Building, Baltimore, Md., on and after Tuesday, September 8, 1914. No charge will be made for the specifications.

A certified check of the bidder on a Clearing-house bank in the sum of \$250, made payable to the order of the Mayor and City Council of Baltimore, will be required to be deposited with each bid.

The successful bidder on this contract will be required to give bond and comply with the City Charter respecting contracts.

The Board of Awards reserves the right to reject any and all bids.

By order of the Sewerage Commission.  
CHARLES ENGLAND,  
Chairman.

HARRY W. RODGERS,  
Secretary.

Approved September 5, 1914.  
JAMES H. PRESTON,  
President Board of Awards.

## Curbing and Paving

## NOTICE TO PAVING CONTRACTORS.

Sealed proposals will be received by the Board of Affairs of Charleston, West Virginia, until 2 o'clock P. M. Thursday, September 24, 1914, for curbing and paving twenty-nine (29) streets in the City of Charleston, West Virginia, containing approximately 40,400 ft. curb and 68,300 sq. yds. paving.

All well-known classes of paving material will be considered. Payments will be made in cash on monthly estimates.

A certified check, payable to order of City Treasurer of Charleston, amounting to two and one-half (2½) per cent. of bid, guaranteeing that successful bidder will enter into contract and furnish satisfactory bond to the amount of fifty (50) per cent. of the bid, must accompany each proposal.

The Board of Affairs reserves the right to reject any and all bids.

For further information apply to G. S. Brown, City Engineer, Loewenstein Building, Charleston, West Virginia.

By order of the Board of Affairs.  
J. F. BEDELL,  
President.

## Notice to Testing Laboratories and Chemists

San Antonio, Texas, Sept. 10, 1914.

Sealed proposals will be received by the undersigned until 4 o'clock P. M. on September 28, 1914, for inspecting and testing material to be used in the construction of permanent paving for the City of San Antonio up to and including the period between date of contract and June 1, 1915.

The City of San Antonio reserves the right to reject any and all bids.

FRED FRIES,  
City Clerk.

## Roller Shelves

Sealed bids will be received and opened by County Commissioners at 2 P. M. October 6, 1914, for Roller Shelves to fit wall 10½ feet high by 13½ feet wide, books 13x15½ inches. Space between rollers 3¼ inches, except one tier floor to ceiling, 2-inch space between rollers.

Also, one separate tier Roller Shelves for books 20x2½ inches, between rollers 2½ in., about 15 books.

Describe base, top and finish.  
For further information address  
J. E. FULTZ, Clerk,  
Fort Pierce, Fla.



# America's Opportunity

There is probably no higher economic authority living than Sir George Paish, Editor of the Statist, London. In discussing the economic phase of the war he said:

A great war in Europe will probably bring economic advantages to the United States. It will enable it to sell its great crops in places which will give a much greater income than if there was no war.

Almost every industry will derive more or less advantage. American investors and bankers should get in much profit from the ability to buy back from Europe great quantities of securities at attractive prices in payment for the foodstuffs and raw material exported from the United States.

The United States can become, as it has this week, the world's greatest market for capital.

For the United States to gain benefit from the position as the wealthiest nation in the world it is essential that American investors should not only have confidence in the future of their own country, but also believe that, war or no war, the world will continue to progress.

In brief, a great war in Europe will give the United States an opportunity of assuming the post of world banker by supplying capital freely to countries and individuals in all parts of the globe who need it and can provide the required security. Should the American people take advantage of the golden opportunity afforded them by the outbreak of war, it will mean, not diminished, but increased prosperity for the United States.

Now is the time for the real men of this Country to show their faith in themselves and in the Country and in our business possibilities.

The faint-hearted, affrighted by shadows, rush to cancel orders. They are afraid of themselves and of their ability to win victory from disadvantages. They become burden shirkers at the first moment possible. If everybody followed their lead, the country would go tobogganing down to ruin headlong.

## But

There are other red-blooded men and red-blooded corporations that are not frightened by every storm. They stand by their contracts to the utmost limit of ability, even if to do so does involve temporary loss. They are builders, upbuilders, burden bearers, and they save the country and themselves by their backbone and courage.

This is a time for doing things—a time to run up your flag instead of hauling it down—a time to get your share of all the business going—a time to let the world know you are not frightened out of your boots, and that you are in business to stay.

## How?

*Push your business; advertise it.* Tell the world you are not "gun shy" and that you will always be found moving forward and not turning tail, running away from the contest.

## Where!

*Advertise in the Manufacturers Record, and also elsewhere if you want to, BUT ADVERTISE.* The Manufacturers Record has never lost faith, never stopped working for the country's upbuilding, and it invites you to join the front ranks of America's best business houses. The greater the difficulties, the greater the energy it puts forth.

## INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

### Want Agency for Printers' Supplies.

W. J. Turner and W. L. Bulmer, who have organized under the firm name of the Franklin Printers' Supply Co., 18 N. 14th St., Richmond, Va., desire to handle printers' supplies in connection with their lithographic and printing ink line. Both Mr. Turner and Mr. Bulmer are experienced business men and have had many years of experience on the road selling this and kindred lines.

### Cold Dry Refrigeration and Ice-Making Machine.

Chas. R. Fife Co., St. Louis, says that it will send a booklet on cold dry refrigeration that will produce cold dry refrigeration of whatever temperature wanted, equal to 300 pounds of ice and upwards, and manufacture ice for cafes, hotels, clubs, meat and fruit shops, homes, etc., to those interested upon application, if they will furnish specifications of their needs in the direction indicated.

### Sugar Mill Machinery Contract.

The Fulton Iron Works of St. Louis, Mo., has received an order from the Manati Sugar Co. of New York for two-tandem sugar-milling machinery, consisting of two 12-roller mills, driven by Corliss engines, and accessories to be used in connection with the one-tandem mill furnished by the company last year for the Manati (Cuba) plant. The company states this is the largest single order for cane-mill machinery ever placed in the United States.

### Woolen Mills for Sale.

The real estate, buildings and machinery of the Crawford Woolen Co. of Martinsburg, W. Va., will be sold at public auction at the Martinsburg Courthouse, October 3, 1914, by George M. Bowers, H. B. McCormac and H. H. Emmert, trustees. The machinery and equipment include 43 C. & K. looms, 36 C. & T. looms, 6 Knowles looms, 25 harness, 4x4 box, all 82 inches reed space; universal dressers, warp compressors, cards with 7450 spindles to follow, bobbin winder, skein winders, pickers, shearing machines, burling tables, three 100-horse-power boilers, Corliss engine, gasoline engine, presses, pumps, electric motors, etc.

### Forty Carloads of Rubber.

The largest quantity of high-grade crude rubber ever received in New York and then shipped in trainload to any one firm was shipped over the Baltimore & Ohio Railroad to the Goodyear Tire & Rubber Co. at Akron, O., so the company states in a letter to the Manufacturers Record. The train, which consisted of 40 cars, before leaving Staten Island, where it was made up, was decorated with banners bearing this inscription: "Finest grade crude rubber for the Goodyear Tire & Rubber Co., Akron, O." Much of this crude rubber was brought from London by the steamship "Minnehaha," which is said to have carried the largest rubber cargo in the history of the industry. The series of events marks the working out of the plan that enabled Goodyear to announce recently that there are "no war prices" on Goodyear tires. "There is no present excuse for war prices on tires," Goodyear officials reiterate.

### "Glendora" Pump Contract.

A 400-gallon-per-minute size "Glendora" triple-plunger artesian well pump, manufactured by the Deane Steam Pump Co. of Holyoke, Mass., has been purchased by the Atlantic Coast Line Railroad through the Hughes Specialty Well Drilling Co. of Charleston, S. C., Southern agents for "Glendora" pumps, and will be installed at the Waycross Railroad shops in one of the 16-inch wells recently drilled by the Hughes Company. Some of the advantages claimed for this type of reciprocating pump are: Large capacity from given well, high mechanical efficiency, uniform continuous flow of water in riser pipe, uniform load on prime mover, ability to discharge direct into mains, small engine or motor required to operate, accessibility and heavy mechanical construction. "Glendora" type of pumps are fully described in bulletin "D-300" issued by the Hughes Specialty Well Drilling Co.

and will be sent to interested persons upon request.

## TRADE LITERATURE.

### Timken Axles and Bearings.

Information of interest to automobile manufacturers, agents and owners is given in the August number of the "Timken Magazine," issued by the Timken-Detroit Axle Co. of Detroit, Mich. Many illustrations of pleasure and commercial automobiles, both gas and electric, which use Timken roller bearings and axles are shown in the magazine, together with a partial list of manufacturers using Timken products in part or throughout the construction of automobiles. A description of the merits of worm-drive for automobiles is also given in the publication.

### Metal Work for Banks.

In a catalogue recently issued by the Cincinnati Manufacturing Co. of Cincinnati, O., are shown illustrations of metal work for banks and public buildings executed by the company. The company states that special designs and estimates on bronze doors, railings, wickets and grilles and bank signs for round or square columns will be submitted upon request.

### Good Roads Work.

A description of good road building in Monroe county, Mississippi, illustrated with views showing the road before and after improvements, and a new idea for building concrete roads which has been worked out by Alvah Brown, Grand Rapids, Mich., are contained in the September issue of The Highway Magazine, published in the interest of good roads by the American Rolling Mill Co., Middletown, O. Illustrations and description of culverts and bridge construction of American ingot iron and other information of interest to road builders are also given in the magazine.

### Atlas Concrete Mixers.

The "Concrete Facts" circular issued by the Atlas Engineering Co., 780-90 30th St., Milwaukee, Wis., contains illustrations and descriptions of its products, and states that by reason of a large production of a standard model, it is enabled to offer a high-grade mixer at a low price. Illustrations showing a day's shipment of Atlas batch hopper type, five-foot capacity, concrete mixers and mixers in actual operation using side loaders and hoisting attachments are also given. A complete catalogue, illustrating and describing Atlas mixers, will be sent to interested persons upon request to the company.

### Hindley Worm Gears.

Worm and spiral gearing, casings or housings for worm gears, straight worm gears, bevel gears and spur gears are illustrated and described in catalogue No. 5, issued by the Hindley Gear Co., 1105 Frankford Ave., Philadelphia, Pa. A review and discussion of worm gears, their use, and especially the advantages of the Hindley worm and spiral gears, are contained in the catalogue. Illustrations and sectional drawings of Hindley worm gears, showing their application to automobile drives, engine lathes, engine valve transmission, incline railways, locomotive drop tables, mining machinery, turbine reduction, windlasses, capstans, steering mechanisms, turret-turning apparatus for battle-ships, etc., are also given in the catalogue.

### Industrial Railway Equipment.

The Easton Car & Construction Co. of Easton, Pa., with general sales office at New York city, designer and builder of railway equipment for all industries, has recently issued catalogue No. 508, containing illustrations and description of railways and their accessories, portable, industrial and permanent tracks, industrial track layouts, etc.; switches, frogs, crossings, turntables, steel industrial cars of every description, etc. The catalogue gives information required for inquiries and orders, and diagrams illustrating proper method of laying switches, turnouts and track portable layout. Illustrations and description of cradle and rocker double side-dump cars, hopper and gable bottom cars, skip cars, platform cars, charging cars, scoop and end-dump cars, steel plant and rolling-mill cars, pig-iron cars, quarry cars, transfer cars, etc., and buckets and industrial railway car scales are also included in the catalogue.

and method of manufacturing shafting, including tables of weights of steel shafting, mill flange and jaw couplings, oiling bearings, base plates, floor stands, post bearings, drop hangers, pulleys, clutches and other power transmission machinery are given in the catalogue. General information has been compiled, including capacity tables and formulae, for manilla rope transmission. The company states its facilities are of the most modern and its designs have been constantly improved where experience dictated improvements could be made to enable it to produce products of the highest workmanship and material.

### Vilter Corliss Engines.

In presenting its new engine catalogue, the Vilter Manufacturing Co. of Milwaukee, Wis., manufacturer of Corliss engines and ice-making and refrigerating machinery, announces that it has endeavored to state in a brief and comprehensive manner the main features of its line of modern Corliss steam engines, with their latest additions and improvements. Illustrations of the plant and description of the company's facilities for manufacturing, etc., are given in the catalogue, together with illustrations and description of construction of each type of engine. A formula for obtaining the horse-power developed by the different types of Corliss engines is also given.

### Power Transmission Machinery.

In a 24-page, clothbound, illustrated catalogue, known as No. 11, issued by the Hill Clutch Co. of Cleveland, O., much information of value is given regarding the manufacture and use of friction clutches and power transmission machinery. Description

## Contractors' Equipment FOR SALE

1 75 H. P. Flory Electric Hoist.  
2 Cableways (complete).  
1 Traveling Derrick.  
1 Stiff-Leg Derrick.  
2 Haines Auto Mixers.  
125 Dunn Sewer Bracers (new).  
1 2-inch Electric 5 H. P. Cent. Pump.  
1 3-inch Electric 7½ H. P. Cent. Pump.  
1 4-inch Electric 10 H. P. Cent. Pump.  
1 6-inch Electric 15 H. P. Vert. Pump.

JAMES H. HOLMES

87 Nassau St. New York

## TRUSTEES' SALE

GEORGE M. BOWERS, H. B. McCORMAC and H. H. EMMERT, Trustees of THE CRAWFORD WOOLEN COMPANY, bankrupt, will sell at public auction at the front door of the Courthouse in Martinsburg, West Virginia, on Saturday, the 3d day of October, 1914, at ELEVEN O'CLOCK A. M., all of the real estate, buildings and machinery of said company. Machinery consists of the following:

43 C. & K. Looms, 36 C. & T. Looms, 6 Knowles Looms, 25 harness, 4x4 box, and all 82" reed space; 6 84" Universal Dressers with stands, 3 Warp Compressors, 3 Beaters, 12 Furbush Spoolers, 1 Universal Bobbin Winder, 8 Skein Winders, 6 Sets 60" Furbush Cards, 4 Sets 60" Bridesburg Cards, 1 Set 60" Davis & Furber Cards, all clothed with 7450 spindles to follow; 2 Collins Bros. Twisters, 2 Furbush Bros. Twisters, 2½" ring; 2 40" Fearnought Pickers, 1 Gerry Rag Picker, 1 Smith Burr Picker, 1 Stock Blower, 3 Shearing Machines, 35 Burling Tables, 2 100 H. P. Steam Boilers, 1 225 H. P. Frick Corliss Engine, 1 20 H. P. Gasoline Engine, 1 Webster Heater, 7 Pulling Mills, 4 Washers, 1 Callaghan & Bro. Cloth Dryer, 2 36" Extractors, 2 Cloth Presses, 1 Cloth Winding Machine, 1 Chinchilla Machine, 1 Brush, 1 Doubling and Tacking Machine, 1 Dyeing Machine, 1 Vacuum Dyeing Machine, 1 Piece Dye Machine, 10 Dye Tubs, 1 Stock Dryer, 2 Water Feed Pumps, 3 50 H. P. Electric Motors, 1 40 H. P. Electric Motor, 3 20 H. P. Electric Motors, 1 10 H. P. Electric Motor, 1 7 H. P. Electric Motor, all Westinghouse.

Trustees will offer all of the real estate, buildings, machinery and equipment complete, and the machinery in separate items. Inspection and correspondence solicited. Terms on application.

GEORGE M. BOWERS, H. B. McCORMAC, H. H. EMMERT,  
Trustees of The Crawford Woolen Company, Bankrupt.



Why Put a New Fuse Into the Circuit Every Time You Have a Blowout?

Cut annual fuse maintenance 80% and secure positive electrical protection under all conditions.

## ECONOMY RENEWABLE CARTRIDGE FUSES

When an Economy fuse blows, you don't throw it away—you simply insert a new renewal element and have virtually a new fuse. 25 blowouts of an ordinary non-refillable fuse (100 Amps, 250 Volts) cost \$10.12½, while 25 blowouts of an ECONOMY renewable cartridge FUSE of the same capacity cost \$2.10—and remember Economy fuses give absolute protection—they do not vent fire nor hold a sustained arc. They are the only renewable fuses uniformly rated. Economy fuses meet the performance specifications governing the use of such devices.



Why spend four times more than necessary in fuse maintenance? Write today for Bulletin M. R.—and list of prominent satisfied users.

Two renewal elements furnished free with each Economy fuse. Figure the saving yourself.

Economy Fuse & Mfg. Co. Kinzie and Orleans Sts. CHICAGO



## Special Advertisements of General Interest.

### THE CONTROLLING INTEREST IN AN OLD ESTABLISHED BUSINESS FOR SALE

THE COMMON STOCK EARNED 50% IN 1913

Orders now on the books indicate a better business for 1914.

Owing to ill-health and reluctantly acting upon the urgent advice of his physician, a client has instructed me to offer for immediate sale the controlling interest in a

**\$400,000.00**

#### TEXTILE and GARMENT MFG. CORPORATION

This is the largest, most important and best-known concern in this line in the United States. Organized in 1900 with a capital of only \$5000, it has grown to its present proportions of \$400,000 entirely out of earnings, besides paying very large cash dividends to its stockholders.

It has the most perfectly efficient organization in this country. The factory manager, sales manager, and heads of departments are all stockholders who have grown up in the business. They have made the past great success possible and are well equipped to make the future even better, so that the purchasers of this stock can step into a well-managed and very profitable business. This is a rare and unusual opportunity for a man to start his son in a very interesting, clean and profitable industry.

This business has just been appraised and the books audited by one of the best-known public appraisal and auditing companies. This report is open to inspection. The company has always enjoyed the highest commercial rating, and the highest bank and commercial references will be supplied upon request.

Full details upon request. Correspondence solicited and inspection of the plant invited

**T. S. SPRAGUE, Investment Securities,**

1802 Ford Building, Detroit, Michigan.



### MANUFACTURING PLANT FOR SALE

Consisting of brick and concrete ware room 70x130, four stories, and machine shop 36x100—both new buildings of standard construction, situated on main line of Chesapeake & Ohio R. R. and the Valley branch of B. & O. at Staunton, Va.

FOR FURTHER PARTICULARS, WRITE

**W. A. PAYNE,**

**STAUNTON, VA.**

### USED MOTOR CARS AND TRUCKS

ASK FOR LATEST LIST TODAY

**MAR-DEL MOBILE CO.**

BALTIMORE, MD.

REFERENCES—BRADSTREET OR DUN.

### Natural Gas Four Cents

for Industries at

**HENRIETTA, TEXAS**

Domestic Gas 20 cents. Three Railroads, Water, Low Taxes, Healthful. Write **HENRIETTA BOOSTER CLUB**

### Electric Light, Ice and Water-Works

FOR SALE

In best Southwest Texas town in Texas. Gross income will run this year about \$18,000. Business fast growing. Price forty-five thousand dollars (\$45,000); terms on at least half. Address

**SOUTHWEST**

Care of Manufacturers Record, Baltimore, Md.

American and European Plans

Open All the Year Around

### DE SOTO HOTEL

TAMPA, FLORIDA

New, Spacious and Airy. All Modern Conveniences. Two Blocks from the Business Centre. Suites of Any Size on Short Notice

WRITE OR WIRE FOR RESERVATIONS

**W. L. PARKER, Manager**

Western Union Office in Lobby

### THE HAMMOND HOTELS THE HOTEL ESSEX

Opposite South Terminal Station  
BOSTON, MASS.

European Plan.  
Rates Moderate.  
Absolutely Fireproof.

Free Transfer Baggage from and to Station.  
Terminal of Trains from South and West.

**DAVID REED, Manager**

### The PLANT and PROPERTY of the LUDOWICI-CELADON COMPANY FOR SALE

Located at Ludowici (Liberty County) Georgia, comprising approximately 1900 acres adjacent to the town of Ludowici, together with certain manufacturing buildings, three 80 H. P. Boilers, one 150 H. P. Corliss Engine, one 50 H. P. Ball Automatic Engine, one 25 H. P. Sawmill Engine, one 9-ft. dry-pan, three pug mills, two dwelling houses, club-house, twenty-five negro cabins, farm buildings, etc.

Write for Particulars

**LUDOWICI-CELADON COMPANY**

1106 Monroe Building

CHICAGO, ILL.

## In Chancery at Nashville, Tennessee

The Union Bank & Trust Company, et al.

Rule No. 26945. Per Decree of Court, Minute Book 89; Page 20

VS.

Bon Air Coal & Iron Company

## FOR SALE

About one hundred and seventy-five thousand acres of coal, iron and timber lands, together with all improvements upon them, consisting of:

Three coal mines, equipped and in operation.

Two pig iron blast furnaces, each of one hundred tons daily capacity.

Iron ore mines, equipped for mining, washing and delivering ore.

All of these properties are located in Tennessee, the coal lands in the counties of White, Cumberland, Van Buren and Putnam, and the iron-ore lands in the counties of Dickson, Hickman, Lewis and Wayne, and described in the Report of Special Commissioner J. R. West, recorded in Minute Book 87, page 20, et seq., Chancery Court, Davidson County, Tennessee.

TERMS OF SALE—Lands and improvements, four equal payments, on or before six, twelve, eighteen and twenty-four months, with interest.

Scaled bids are invited for the properties in parcels and as a whole, as follows:

I.

About thirty-one thousand and five hundred acres of coal and timber lands, with three coal mines, equipped and in operation, fifteen hundred tons daily capacity. Described in said report as tracts 110 and 104, inclusive; lands covered with merchantable hardwood timber, a small part of which has been removed; three mining towns, two hundred bee-hive coke ovens.

A tract of about one thousand acres is excepted from part of tract number 138 as described in said report, on which the Ravenscroft shaft is located, for which bids are invited, as set out in Section XII hereof; and a tract of 91 acres of coal lands, being part of tract No. 133, described in said report, which is included in Section II.

II.

About ten thousand six hundred and thirty-two (10,632) acres of coal and timber lands, described in said report as tracts numbers 98 to 109, inclusive, and part of tract 133 and tracts 173 to 175, inclusive, covered with merchantable hardwood timber, about half of which has been removed.

III.

About fifty-five thousand acres of brown hematite iron ore and timber lands, with two pig-iron blast furnaces, each of one hundred tons daily capacity, equipped for operation with coke. Iron ore mines equipped with washer plant.

Lands described in said report as tracts 1 to 74, inclusive, and 79 to 97, inclusive. These lands are covered with timber, but most of the valuable timber has been removed.

IV. HARDWOOD TIMBER.

About twenty-seven thousand acres of land, covered with virgin forest, of hardwood, merchantable timber. Bids are invited for the timber and for the lands separately, and for the timber and land together. Experts estimate one hundred and two million feet of merchantable hardwood timber. Bidders for the timber alone will indicate the time desired to remove it from the land.

Terms for the timber will be 20 per cent. cash; the remainder in four equal payments, on or before twelve, eighteen, twenty-four and thirty months, with interest.

V.

Bids are invited for the properties referred to in Roman numeral III and Roman numeral IV as a whole.

VI.

About five hundred and three and one-half (503½) acres, described in said report as tracts 220, 223, 226, 227, 228 and 229.

VII.

About two hundred and six (206) acres of surface only, described in said report as tracts numbers 221, 222 and 224, and a one-fourth interest in one hundred and sixty-nine acres of surface, described in said report as tract number 225.

VIII.

Also an undivided one-fourth interest in five tracts, with rights of way, situated in Carter County, Tennessee—iron ore and mineral lands, described in a deed dated 20th of July, 1886, and recorded in the Register Office of Carter County, Book V, page 91, to which reference is made.

IX.

Also an undivided one-half interest in ores and mineral rights and interests and rights of way in a tract of about 250 acres of land in Carter County, described in deed recorded in Book V, page 89, of the Register's Office of said county, to which reference is made.

X.

Bids are invited for personal property, for cash, consisting of materials, stocks of goods, and all other personal property which do not form a part of the equipment of the mines and works. Inventories will be furnished bidders at the office of the company, in Nashville, Tennessee.

XI. HARDWOOD TIMBER.

About fifty-five thousand acres of coal and timber lands, on forty thousand acres of which experts estimate there are one hundred and fifty million feet of merchantable hardwood timber. The coal has not been worked. There are a number of outcrops, showing several veins of coal. The lands are described in said report as tracts numbers 165 to 172, inclusive, and 176 to 219, inclusive.

XII.

An undivided one-fourth, and also an undivided three-fourths interest in a tract of land containing about one thousand acres, being the northwest one thousand acres of tract number 138, as described in said report.

Said tract has upon it the Ravenscroft shaft and power plant and part of the town, and the one-fourth interest in said thousand acres is subject to a lien for about thirty-five thousand dollars for purchase price; and also for part of the mine plant about three thousand dollars.

Separate bids are invited on these interests.

XIII.

Bids are invited for all of the properties referred to above as a whole.

XIV.

Scaled bids will be received until the second Monday in November, 1914. Any or all the properties will be shown to persons desiring to bid.

XV.

The court reserves the right to accept or reject any or all bids. Information will be furnished as to descriptions of properties and details at the office of the company, in Nashville, Tennessee, to any one desiring to bid.

This June 10, 1914.

T. M. STOEHR,

R. T. SMITH,

Collectors.

ROBERT VAUGHN,

E. C. LEWIS,

Receivers.

# Bargains in Machinery and Supplies.

## AT A BARGAIN

- 3 Lidgerwood Hoisting Engines, cylinders 8 1/2 x 10, D. D., D. C., first-class condition.
- 1 Wetherall Twin Corliss Engine cylinders 20 x 42, first-class condition.
- 2 5" Worthington Turbine Pumps, D. C. to 85 H. P. motors.

Plants Bought and Dismantled  
**BOSTON IRON & METAL CO.**  
 Pratt St., BALTIMORE, MD.

## NOW

Is the Time to Buy Machine Tools. Look over our second-hand stock of

**LATHES  
 DRILLS  
 PLANERS  
 SHAPERS  
 GRINDERS, Etc.**

Send for List  
**PRENTISS TOOL & SUPPLY CO.**  
 New York

## BOILERS

- 150 H. P. Erie City, 72x18, 150 lbs.  
 2 300 H. P. Edgemoor, 175 lbs. pressure.  
 2 350 H. P. Stirling, 175 lbs. pressure.  
 400 H. P. Heine, 190 lbs. pressure.  
 4 500 H. P. Stirling, 150 lbs. pressure.

Also Engines, Dynamos, Motors, Etc.  
 Write us for Second-hand Machinery.  
**HAROLD R. WILSON MACHINERY CO.**  
 419 Pine St. Other Sizes St. Louis, Mo.

## A Few Bargains in Stock

- 1 4-ton Remington Refrigerating Machine, power driven; will furnish with or without motor or engine.
- 1 No. 62 Bliss Straight-sided Press.
- 1 No. 2 Saxon Mch. Co. Surface Grinder.
- 1 1/2" Ajax Forging Machine, with dies.
- 1 4"x4" Deane-Holyoke Triplex Pump.
- 1 5 H. P. Wagner Single-phase Motor.
- 1 10 H. P. Westinghouse 3-phase Motor.
- 1 35 H. P. Westinghouse 2-cyl. Gas Engine.

**THE ASSETS PURCHASING CO.**  
 WHEELING, W. VA.

## Special Bargains in Sanders

- 1 42" 3-drum Perfection Sander, thoroughly overhauled, \$350.00
- 1 48" 3-drum Thomas Sander, \$400.00
- 1 48" 3-drum H. B. Smith Sander, \$500.00
- 1 48" 3-drum Royal Invincible Sander, used only 3 weeks, \$350.00
- 1 54" 3-drum J. A. Fay & Co. fine order, \$500.00
- 1 60" 3-drum Columbia Sander in A-1 condition, \$600.00

## JOINTERS

- 1 20" Carrey Hand Jointer, \$100.00
- 1 30" Buss Extra Heavy Hand Jointer, \$125.00

Woodworking machinery of all kinds. Write, stating your requirements.  
**CLEVELAND BELTING & MACH'RY CO.**  
 1922 Scranton Road Cleveland, O.

## Filters for Sale—Cheap

One 10-ft. Pressure Filter, made by the New York Filter Co. Fair condition. Fittings included. \$300.

Two 40-inch Pressure Filters, made by same company. Good condition. Fittings included. \$100 each.

## Also

150 H. P. Return Tube Boiler and fittings. State Inspector allowed 95 lbs. pressure when removed. \$85.

**KENSINGTON WATER CO.**  
 New Kensington, Pa.

## FOR SALE

One 60 H. P. High-Speed Automatic American-Ball Engine in first-class shape. Also, one 50 H. P. Stationary Tubular Boiler, one Feed-Water Heater, and one Boiler Feed Pump, with all connections and fittings.

**CHATTANOOGA SAW WORKS**  
 Chattanooga, Tenn.

## A. C. UNITS 3 PHASE 60 CYCLES

K. W. Make.	Volts.	Rev.	Engine.
300 Westge.	480	3600	West. Turb.
400 Westge.	440	100	24x48 Corliss.
400 G. E.	440	150	M. I. & S. C. Comp.
600 Westge.	440	90	32x48 Corliss.
2 1000 Westge.	2300-440	1800	Westge. Turbines.
1500 Westge.	440	50	28 & 56x48 Rice & Sargent C. C. Corliss.

Also D. C. Units, Boilers, Engines, Etc.  
**HAROLD R. WILSON MACHINERY CO.**  
 419 Pine St. Other Sizes St. Louis, Mo.

## Electrical Apparatus

Bought, Sold, Exchanged, Rented and Repaired  
 Large stock of motors and small generators. Write for our A. C. motor price list. Get our repair and rental prices. Send us a list of the equipment you have for sale.  
**V. M. NUSSBAUM & CO.** Fort Wayne, Ind.

## ENGINES

All Kinds Automatic-Throttling and Corliss  
 32 & 62x60 Allis Cor. C. C. Hor. Corliss.  
 26 & 54x60 Allis Cor. T. C. Hor. Corliss.  
 26 & 42x48 Vilter Cor. C. C. Hor. Corliss.  
 18 & 32x48 Allis Cor. Tand. Comp. Cor.  
 14 & 28x36 L. & B. Cor. C. C. Hor. Corliss.  
 Also following simple Corliss engines:  
 13x36—16x42—24x48—26x48.  
**GAS ENGINES—BOILERS—GENERATORS**  
**HAROLD R. WILSON MACHINERY CO.**  
 419 Pine St. Other Sizes St. Louis, Mo.

## Watertown Engine FOR SALE

One 150 H. P. 4-valve Watertown Engine, operated at 125 lbs. steam pressure; in good running condition.

**EATON, CRANE & PIKE CO.**  
 Pittsfield, Massachusetts.

## Second-Hand Tools for Sale

Now in use, of modern type, first-class order and condition, with full and complete equipment, consisting of Lathes, Planers, Drills, Horizontal and Vertical Boring Mills and Milling Machines.

**NEW HAVEN MFG. CO., New Haven, Conn.**

## DYNAMOS AND MOTORS, SWITCH-BOARD, INSTRUMENTS, FANS, Etc.

- For quick removal—  
 150 K. W. 8-pole C. & C. to 4-valve Fleming engine, \$1400.00  
 75 H. P. new G. E. 850 R. P. M. slip-ring 3-phase motor, with base pulley and controller, 500.00  
 50 H. P. 3-phase G. E., complete, 850  
 R. P. M., 290.00  
 50 H. P. 2-phase G. E., complete, 850  
 R. P. M., 280.00  
 Carload Small Direct Current Semi-enclosed Motors at following prices:  
 1/4 H. P., 1400 R. P. M., \$8.50  
 1/2 H. P., 1400 R. P. M., 11.00  
 3/4 H. P., 1400 R. P. M., 16.00  
 1 H. P., 1400 R. P. M., 23.50  
 Special price in lots of ten.  
 We carry large stock electrical machinery. Let us have your requirements.

**R. Scheinert Co., 125 N. Third St., Phila., Pa.**

## Used Engines in Stock

PHILADELPHIA

Overhauled, Ready for Immediate Delivery

## HORIZONTAL SLIDE VALVE

- 8"x10" "Snell & Meberg."  
 8"x10" C. C. "Erie."  
 8"x14" S. C.  
 10"x8" S. C. "Buffalo Forge."  
 10"x12" C. C. "Nagle."  
 10"x15" S. C. "Suppice."  
 12"x16" C. C. "Erie."  
 12"x16" S. C. "Chandler & Taylor."  
 14"x16" S. C. "Brownell."  
 15"x16" C. C. "Nagle."  
 16"x18" S. C. "Erie City."

## VERTICAL SLIDE VALVE

- 7"x7" C. C. "Sturtevant."  
 8"x8" S. C. "Snell & Meberg."  
 9"x9" C. C. "Nagle."  
 14"x14" C. C. "Nagle."  
 14"x16" C. C.

## CORLISS ENGINES

- 12"x24" R. H. "Whitehill."  
 16"x42" Heavy Duty L. H. "Ohio."  
 18"x32 R. H. "Naylor."  
 18"x42" L. H. "Watts-Campbell."  
 24"x56" L. H. "Watts-Campbell."  
 We have a number of smaller engines, also other Steam and Electric Power Equipment, Metal and Woodworking Machinery. Send for list.

**L. F. SEYFERT'S SONS, Inc.**  
 437-441 N. 3rd St. PHILADELPHIA

## MACHINERY BARGAINS

A few selections from our big stock of snaps. Write for Free Complete List  
**No. XB 213.**  
 1000 tons "T" Rails, 12 to 16 lbs.  
 No. XB-31. Worm Gear Freight Elevator, 2000 lbs. cap.  
 No. XB-32. Hoisting Engine, Dbl. Cyl. Drum, reversible link motion, 10 in. x 14 in.  
 No. XB-33. 200 Storage Tanks, capacities from 25 to 2000 gals.  
 No. XB-34. Sprague Electric 3-phase 20 H. P. Motor.  
 No. XB-35. 200 pieces 15-in. 42-lb. "I" Beams.  
 No. XB-36. Austin Jaw Crusher, 14-in. x 10-in. Opening.  
**HARRIS BROTHERS COMPANY, Owners**  
 Chicago House Wrecking Company  
 35th and Iron Streets CHICAGO, ILL.

In replacing our manufacturing equipment we find the following first-class

## Used Machine Tools

which we offer at attractive prices

- 16"x6" Reed.  
 17"x6" Gray.  
 20"x8" Lodge & Shipley, Q. C. G.  
 20"x10" Lodge & Shipley, Q. C. G.  
 20"x12" Lodge & Shipley, Q. C. G.  
 24"x8" Lodge & Shipley, Q. C. G.

## SPECIAL LATHES

- No. 3 Lodge & Shipley Rapid Reduction Lathe.  
 24"x7" Lodge & Shipley Chucking Lathe.  
 14"x8" Towsley Speed Lathe.  
 2 18"x8" Lodge & Shipley Single Pulley Driven Lathes.

## METAL SAWS

Globe Power Hack Saw, 8" capacity

## MISCELLANEOUS MACHINE

- One Marlon Double Grinder.  
 One Marlon Double Grinder on stand.  
 One Diamond Disk Grinder on column.  
 One Sturtevant Blower, diameter of outlet 2 1/2".  
 One "Ohio Planer," 24"x24"x12", with two heads on cross rail.  
 Universal Swivel Table for Radial Drill.  
 Brown & Sharp Grindstone Frame for 5"x36" stone.  
 One Mueller Grindstone Frame for 4"x27" stone.  
 One 12"x40" Mumford Molding Machine.  
 Write for complete description with prices of machines in which you are interested.

**The Lodge & Shipley Machine Tool Co.**  
 CINCINNATI, OHIO

## We Buy and Dismantle FACTORIES

## MILLS

## MACHINE SHOPS

and all kinds of

## INDUSTRIAL PLANTS

We are always in the market to buy

## Scrap Iron and Steel

OF EVERY KIND

## FRANK SAMUEL

Harrison Building

15th and Market Sts Philadelphia, Pa.

## SCRAP MATERIAL

We purchase all grades of old Scrap Material and pay highest market prices. No quantity too large or too small for us to handle. Let us hear from you if you have old scrap material to dispose of.

**H. KANDER & COMPANY**  
 Bowling Green Ohio

## PIPE

## FOR ALL PURPOSES

Slightly used Pipe from 1" to 12" with new threads and couplings. Thoroughly overhauled and tested before shipping.  
 We can save you money.

**Jos. Greenspon's Sons Iron & Steel Co.**  
 St. Louis, Mo.

## OIL ENGINES

- 15 H. P. De La Vergne, \$300.  
 20 H. P. De La Vergne, \$450.  
 32 H. P. De La Vergne, \$575.  
 50 H. P. Meltz & Weiss, \$900.  
 64 H. P. Meltz & Weiss, \$1000.

**DUZETS & SON, 30 Church St., NEW YORK**  
 Send for complete "Bargain List."

## THERE IS A REASON

why our properly rebuilt machinery gives satisfaction

## ASK US

**ENGINES, CORLISS:** 26x48 Filer & Stowell, heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x42 Hamilton; 14x36 Nagle; 12x30 Hamilton; 10x30 Hamilton; 10x24 Hamilton.

**ENGINES, AUTOMATIC:** 2 21x22 Ridgway; 19x18 Ball; 14x14 Ideal; 10x16x12 Buffalo Compound; 12x14 Green; 12 1/2x12 Armington & Sims; 10x18 Buckeye; 9x10 New Victor; 8x14 Noyes; 8x10 McEwen; 5x6 Harrisburg.

**ENGINES, THROTTLING:** 20x24 H. S. & G.; 16x18 Skinner; 16x18 Ames; 14x14 Lewis, vertical; 12x13 New Enterprise; 12x14 Gibbs; 11x16 H. S. & G.; 10x12 Ajax; 10x15 Nagle; 9x16 Brownell; 8x10 New Erie; 8x10 Brownell; 7x10 Atlas; 6x6 Beggs; 3x4 Kriebel.

**BOILERS, STATIONARY; HIGH PRESSURE:** 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 2 80 H. P. for 125 lbs. Standard from 150 H. P. to 20 H. P. for 100 lbs.

**BOILERS, FIRE BOX:** 150 to 10 H. P. high and low pressure.

**BOILERS, VERTICAL:** 100 to 4 H. P. plain and submerged tubular.

**GENERATORS AND MOTORS:** All sizes and kinds, belted and direct connected.

**MISCELLANEOUS:** Heaters, open and closed; pumps, all sizes; sawmills; corn mills and feed grinders; exhaust fans and blowers; woodworking machinery; iron-working tools; leather, rubber and canvas stitched belt; pipe, valves and engine and boiler fittings.

Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

**THE RANDLE MACHINERY CO.**

1734 Powers St., Cincinnati, O.

## FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 18"x10", 18"x8", 16"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 20"x15", 27x16", 20"x10", 18"x8", 13"x6", 13x5".

**CHAS. T. LEHMAN** Birmingham, Ala.

## FOR SALE

One 30 H. P. Huber Portable Engine and Boiler, mounted on wheels. Outfit in first-class condition and has been used only 310 hours.

**The Ohio C. Barber Fertilizer Co., Barber, Va.**

## FOR SALE

## Special Bargains to Quick Buyers

## A. C. GENERATORS DIRECT CONNECTED TO CORLISS ENGINES

- 1 800 K. W. 440-volt 60-cycle 3-phase Alternator, direct connected to 30x48 Allis HEAVY-DUTY DOUBLE-ECCENTRIC Corliss Engine.
- 1 400 K. W. 440-volt 60-cycle 3-phase Alternator, direct connected to 24x48 HEAVY-DUTY Rolling Mill Type Frame DOUBLE-ECCENTRIC Corliss Engine.

## CORLISS ENGINES

- 1 28x48 Vilter HEAVY-DUTY DOUBLE-ECCENTRIC Twin Engine.
- 1 24x48 Nordberg HEAVY-DUTY DOUBLE-ECCENTRIC Twin Engine.
- 1 28x48 Bass HEAVY-DUTY Single-Eccentric Twin Engine.
- 1 30x48 HEAVY-DUTY Belt-Drive Simple Engine.
- 1 26x48 Vilter Rope-Drive Simple Engine.
- 1 18x42 Whitehill Belt-Drive Simple Engine.
- 1 14x36 St. Louis Belt-Drive Simple Engine.

## COMPOUND ENGINES

- 1 34x48x36 Buckeye HEAVY-DUTY Rolling Mill Type Frame DOUBLE-ECCENTRIC Rope-Drive Compound Condensing Engine.
- 2 16x32x42 Murray HEAVY-DUTY DOUBLE-ECCENTRIC Belt-Drive Cross Compound Condensing Engines.
- 1 20x41 1/2x36 Allis-Chalmers HEAVY-DUTY DOUBLE-ECCENTRIC Cross Compound Condensing Engine.

## 4-VALVE ENGINE

- 1 16x22 Atlas HEAVY-DUTY Belt-Drive 4-valve Engine. Used two years only. Virtually new.

**Pfannmueller Engineering Company**

Suite 1733 First National Bank Building  
 CHICAGO



# PIPE

Second-hand, all sizes, 1/2" and larger, with new threads and couplings, guaranteed for service.

- 1 1/2-yd. Ransome concrete mixer with gasoline motor and loader on wheels.
- 3 3/4-yd. and 2 1/2-yd. Ransome mixers with engines on skids.
- 2 No. 2 1/2 Smith concrete mixers with engines on wheels.
- 1 5-lever Stroudsburg 7x10 cableway engine.
- 12 Lidgerwood, Lambert and other hoisting engines.
- 24" and 20" industrial rail and turn-tables.
- 1 5 H. P. Meitz & Weiss gasoline engine.
- 1 4-leaf 1-yd. orange-peel bucket.

## PIPE & CONTRACTORS' SUPPLY CO.

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**Direct Current Generating Sets**  
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**Air Compressors**  
**Steam Pumps and**  
**Mine Equipment**

All in Excellent Condition.  
The above equipment displaced from 19 coal mines by the introduction of Central Station Power.

Equipment Sales Department  
**NEW RIVER CO.**

McDonald West Virginia

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**In Good Order**  
One return tubular boiler of high pressure and all fixtures in perfect order. Has been used 5 years only. Brand new. 40 ft. smoke-stack. I need the money and offer low price f. o. b. cars, \$300, and no less.

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## 250 Volt Direct Connected Sets

- 2 300 K. W. 250 volts 125 R. P. M. CROCKER-WHEELER GENERATORS to tandem compound Wetherill Corliss engines; like new; used only six months. Each \$8500.00
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- 1 55 K. W. 250 volts 280 R. P. M. C. & C. GENERATOR direct connected to a 12x12 Harrisburg Fleming side-crank engine. \$1100.00
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All sizes, 1/2" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

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Suitable for All Practical Purposes

All Sizes In Stock Ready  
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- 3 250 H. P. Franklin Horizontal Water-Tube, 150 lbs. steam.
- 1 175 H. P. 72"x30" Horizontal Return Tubular, 120 lbs. steam.
- 1 150 H. P. 72"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 150 H. P. Babcock & Wilcox Water-Tube, 150 lbs. steam.
- 1 125 H. P. 66"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 80 H. P. Vertical, 100 lbs. steam.
- 1 70 H. P. 54"x16" Horizontal Return Tubular, 125 lbs. steam.

### CORLISS ENGINES

- 28"x48" Hamilton.
- 26"x60" International.
- 28"x48" Allis.
- 18"x42" Watts-Campbell.
- 16"x36" Allis.
- 16"x36" Rickards.
- 14"x42" Hamilton.
- 2 14"x36" Scottsdale.
- 12"x24" Wetherill.
- 10"x24" Watts-Campbell.

### AIR COMPRESSORS

- 1 18"x20 1/2"x13 1/2"x24" Ingersoll-Sargeant Class A Straight Line, two-stage. Capacity 940 cu. ft.
- 1 22"x22 1/2"x24" Ingersoll-Sargeant Class A Straight Line. Capacity 973 cu. ft.
- 1 12"x14 1/2"x14" Ingersoll-Sargeant Class A Straight Line. Capacity 385 cu. ft.
- 1 12"x12"x16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.
- 1 10"x10"x10" Ingersoll-Sargeant Duplex. Capacity 275 cu. ft.
- 1 10"x10"x10" Cox & Sons Duplex. Capacity 275 cu. ft.

### DIRECT CONNECTED UNITS

- 1 200 K. W. 220-volt A. C. Westinghouse 3-phase 25-cycle Generator, direct connected to Buckeye Engine.
- 1 150 K. W. 220-volt D. C. Crocker-Wheeler Generator, direct connected to 14 1/2"x24"x16" Wright Center-Crank Tandem Compound Automatic Engine, 200 R. P. M.
- 1 105 K. W. 220-volt 3-phase 60-cycle Westinghouse Alternator, direct connected to Buckeye Engine.
- 1 60 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"x18"x10" Westinghouse Compound Engine, 315 R. P. M.

**BOILERS, PUMPS, HOISTING ENGINES**  
**WESTINGHOUSE ENGINES, GAS AND**  
**GASOLINE ENGINES, HEATERS,**  
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75 hp. belted type, complete.  
Cheap Power. Sacrifice.  
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60—67s—70s—74s—90s  
With angle bars

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- 1 10"x12" D. C. D. "Lidgerwood" Hoisting Engine and Boiler.
- 1 8 1/2"x10" D. C. D. "Lidgerwood" Skele-ton Hoisting Engines.

Also many other smaller sizes, all rebuilt and in excellent condition.

12 72"x18" Horizontal Butt-Strapped Boilers, 125 lbs. working pressure.

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Including Locomotives, Gondolas, Der-ricks, Hoisting Engines, Boilers, Concrete Mixers, Rock Drills, Buckets, Pumps, Engines, Elevators, Conveyors and Camp Equipment.

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Also relayers of other weights and new light rails, frogs, switches, etc.

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One complete J. I. Case threshing outfit; 9x10-inch cylinder, simple engine; steel separator 28x50 inches, big cylinder; engine tender; cost about \$2500; in fine shape; what have you? Texas coast lands for sale or trade.

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- 1 22x22-13/4x24 Sullivan, steam driven, class WB 2, straight line, 2-stage, cap. 1160 cu. ft. 1 24x24x30 McKiernan, class A, straight line, steam driven, cap. 1414 cu. ft. 1 24x24x30 Ingersoll, class A, steam driven, straight line, cap. 1223 cu. ft. 2 16x20x16 Ingersoll-Sargeant, class H-1, duplex, steam driven, cap. 1540 cu. ft.

### BOILERS

- 5 250 H. P. Babcock & Wilcox, 150 lbs. steam.
- HOISTS (Electric)**
- 2 Lidgerwood, 60 H. P., D. C. and swinger, D. C.

### HOISTING ENGINES (Steam)

- 2 Lidgerwood, 14x18, D. C., 3 tandem drum, reversible link motion.
- 1 Lidgerwood, 10x12, D. C. S. D., reversible link motion.
- 1 Lambert, 10x12, D. C. D. D., with boiler.
- 1 Lambert, 8x10, D. C. D. D., with Massachusetts boilers.
- 1 Lambert, 7x10, D. C. D. D., with boiler.
- 1 Mundy, 7x10, D. C. D. D., with boiler.
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### STEAM SHOVELS

- 2 65-ton Bucyrus, 2 1/2-yd. dippers, \$3000 each.
- LOCOMOTIVE CRANES**
- 1 7-ton 4-wheel Industrial, 21' boom.
- 1 15-ton 3-wheel Industrial Wrecking Crane, 20' boom, goose neck.

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- 2 Fire Engines, condition first class.

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- 2 10x16 36" gauge Baldwin, saddle-tank.

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Bargains in Rebuilt Boilers, Engines, Locomotives, Etc.

- 1 25 H. P. Rebuilt Fire Box Boiler, price \$200.
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- 1 10' dia. Mine Ventilating Fan, with engine.
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In All Sections for Immediate Shipment from Stock

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Six—Built by Baldwin Locomotive Works  
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One yard clam shell Barge  
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Released by Pennsylvania R. R.

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We handle first-class Relaying Rails, and do  
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Four Standard-Gauge Climax Locomotives,  
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Six Thew Revolving Shovels, excellent con-  
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45, 50, 55, 60-Lb. Sections  
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PROMPT DELIVERY.  
8, 12, 16, 20, 25, 30, 35, 40 pounds per yard.  
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UNITED STATES RAIL CO.  
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78 tons, 48 lbs. per yard, with plates  
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Several Locomotives and Cars.

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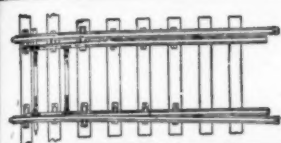
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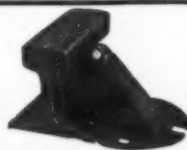
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Switch Stands

CINCINNATI, OHIO

Rail Braces (4)



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### RELAYING RAILS

1000 Tons 75 Lbs. Per Yard.

Located in Central Pennsylvania, suitable for delivery at Buffalo, or for water shipment from New York, Baltimore or Philadelphia.

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We lease or rent, with privilege of purchase.

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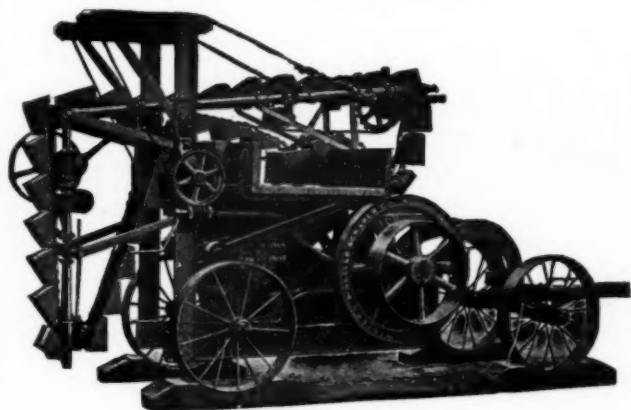
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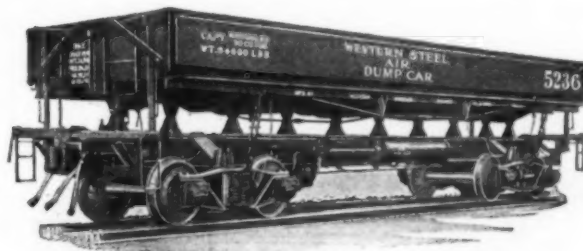
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EARTH AND STONE HANDLING MACHINERY

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have unquestioned advantages for certain kinds of work; and when properly designed are as reliable as steam power.



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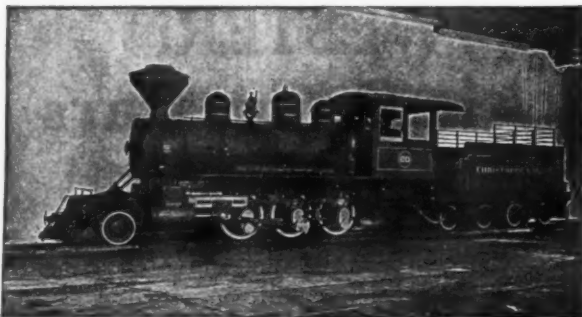
Locomotives of this type can be adapted to use alcohol in place of gasoline, if desired.

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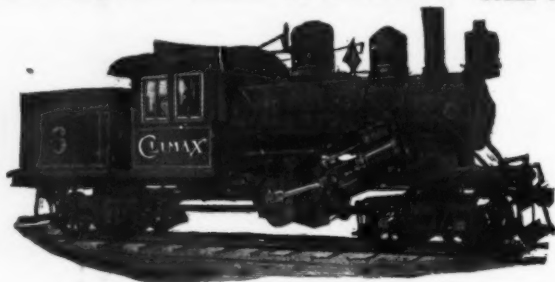


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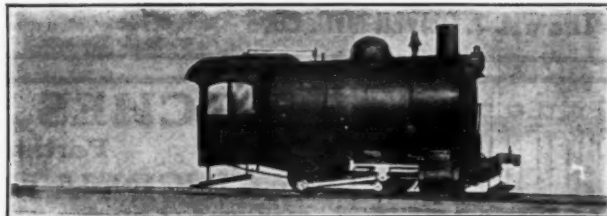
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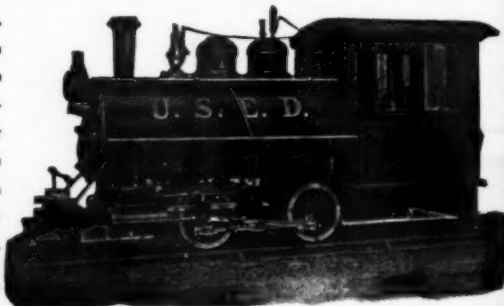
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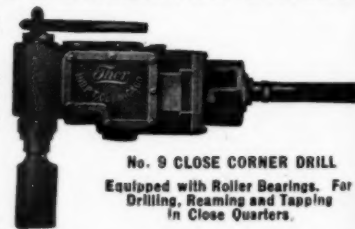
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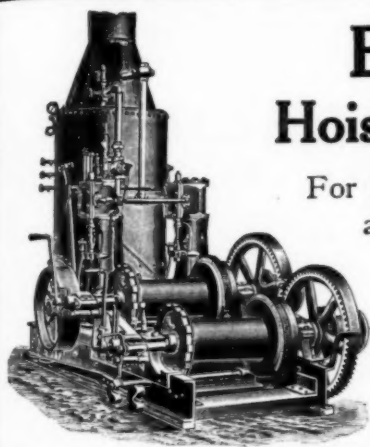
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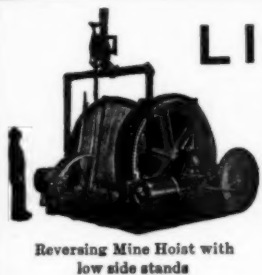
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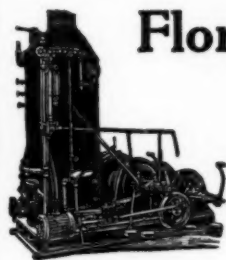
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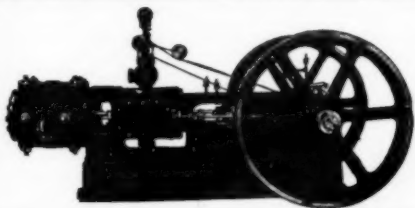
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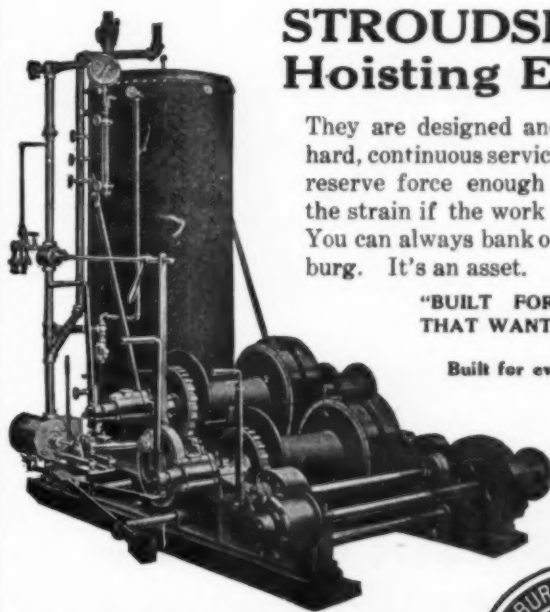
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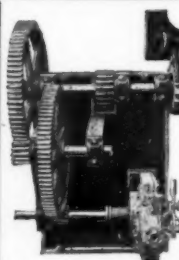


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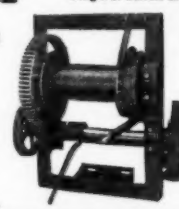
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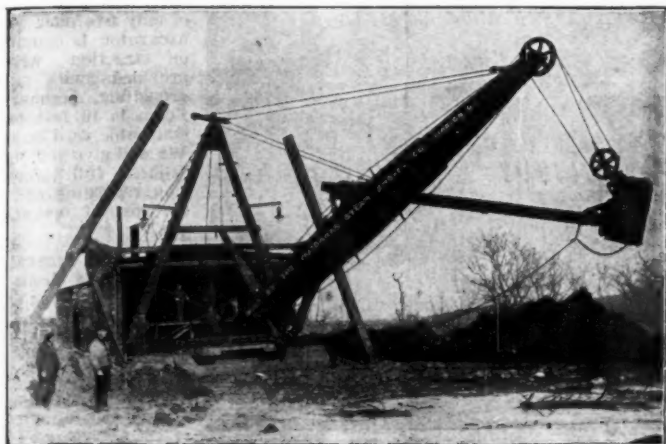
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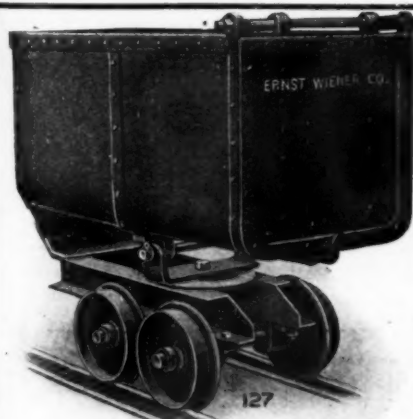
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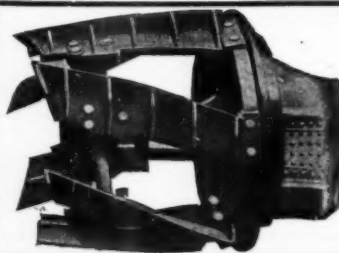
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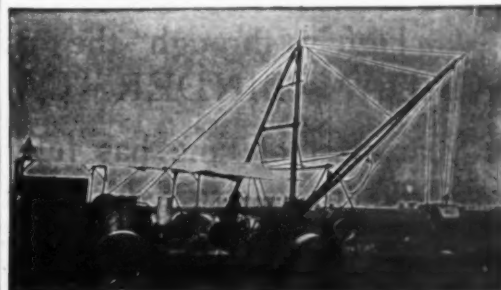
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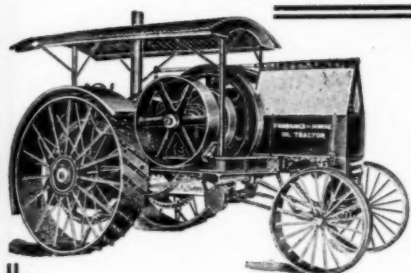
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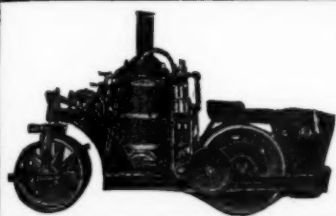
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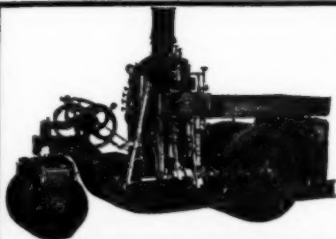
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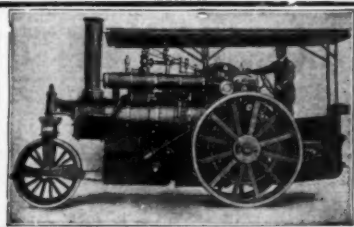
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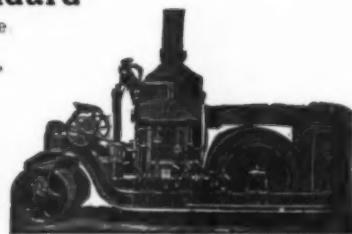
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### Rust Out?

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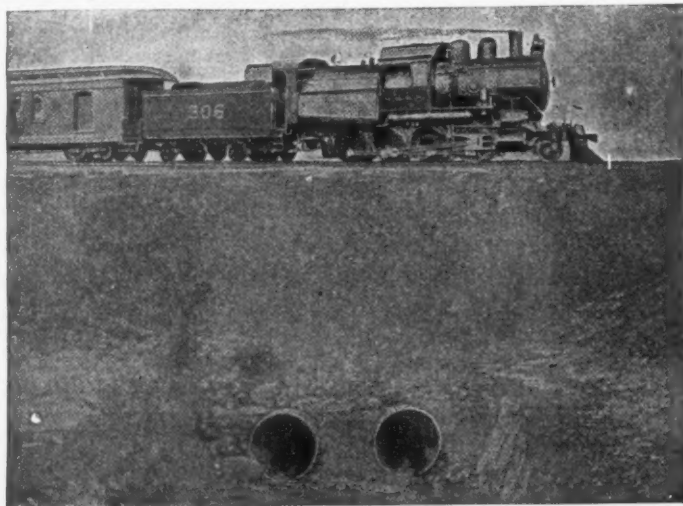
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Are fully described in our new CATALOG, which we send

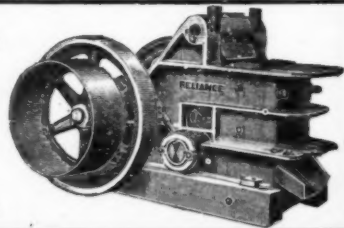
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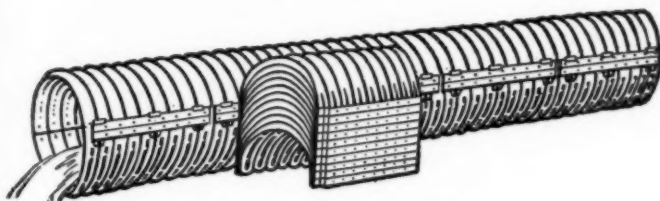
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(Patented)



Ten feet constructed and ten feet nested.  
Every half section exactly alike.  
No holes cut in metal to catch water or oxygen.  
No steel bolts or rivets to start electrolysis.  
Any child can construct it.

These culverts have been used for every conceivable purpose and in all parts of the country. They have proven so satisfactory that our *repeat* orders have kept our factories busy. We could furnish hundreds of references, but after all your own experience is the best evidence. A trial order will determine the matter for you. We guarantee satisfaction.

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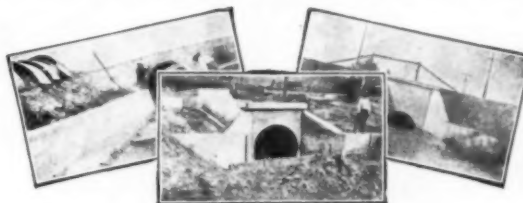
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Scores of Highway Engineers and Contractors are securing uniformly satisfactory results, both from the point of economy and permanent service.

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Our "Friction Joint" Gives Maximum Strength

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"Armedo Quality Stands the Test—Dixie Service Does the Rest."

**Uncle Sam Gets the Best**

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# Cast Iron PIPE

in all regular sizes, 3 inch to 84 inch

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FLANGED PIPE      FLEXIBLE JOINT PIPE  
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Take the last shipment of pipe you bought from us. Compare it critically with any La Belle pipe you may have bought in the past.

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It is this uniformity of quality, year in and year out, "every inch of every pipe and every pipe of every shipment" that is characteristic of "La Belle" pipe and all "La Belle" products.

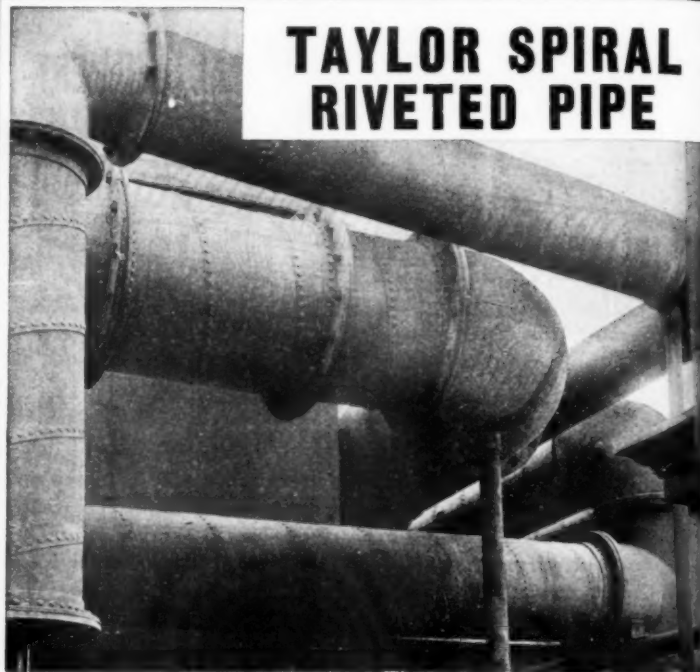
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**MOST ECONOMICAL PIPE** for many purposes about industrial plants. Furnished in accordance with sketch, ready for immediate installation upon arrival.

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## STANDARD RE-INFORCED SPIRAL PIPE Continuous Interlocking Seam Smooth Inside

**USED FOR**

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GENERAL  
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For Steam, Hot Water, Gas or Ammonia

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Fire Clay Stove Pipe  
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### Pipe Cutting and Threading

## MACHINES

All Sizes for Pipe Mills  
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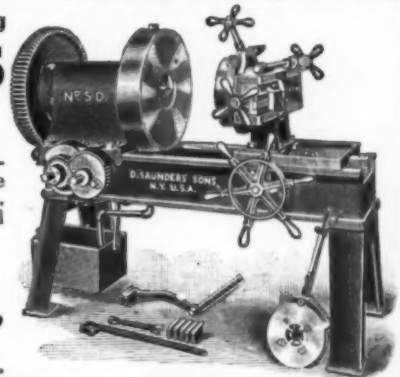
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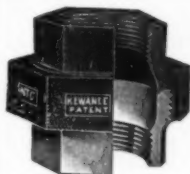
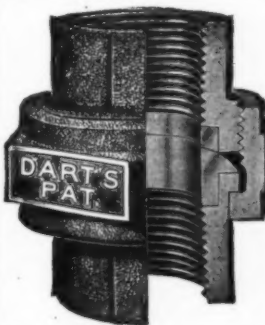
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Have Bronze to Bronze at  
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This construction is embodied in our Flange Elbow, Tee, Male and Female and Air Pump Unions. Ask for circular and sample.

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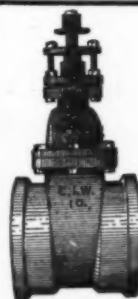


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With No Inserted Parts.  
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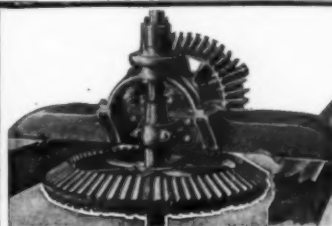
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for Fifty Years*

THE name of Byers Genuine Wrought Iron Pipe is inseparably associated with highest pipe quality. It is as natural to think of Byers as the best pipe as it is to believe that one kind of pipe can be better than another.

Such distinction is never the result of chance; never undeserved. With Byers, it is due to the rigid maintenance of the Byers standard of quality; to the fact that the name Byers on pipe has invariably guaranteed genuineness; full weight; efficiency.

The Byers standards are in themselves higher than those of any other mill. It is notable that in three generations of recorded experience they have never altered; never lowered.

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"It is as good as Byers"*

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ESTABLISHED 1864  
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Also at ATLANTA, DALLAS, CHATTANOOGA, KNOXVILLE, NASHVILLE

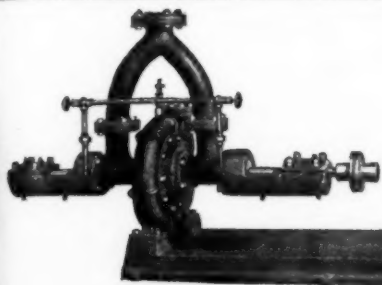
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*Look for the Byers mark on every length and coupling.*

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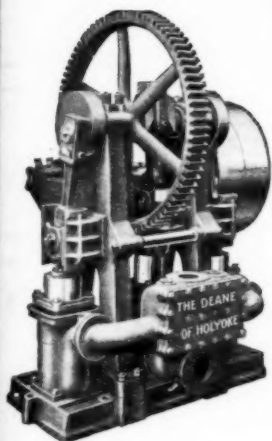


### ERIE TYPE M Centrifugal Pump

Covered in Bulletin  
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Asking

Are easily adapted for special conditions without changing construction or design. Note the position of suction in illustration. The water flows to the pump from a tank setting higher than the pump.

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**THE BEST FOR  
ANY SERVICE**

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**ENGINEERS** agree on the value of high sectionalization, in pumps, from the stand-point of operation and maintenance. High sectionalization is a leading feature of all Scranton Pumps. Ask for a catalog.

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Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow Tile, Fire Proofing, Vitrified Brick, Fire Brick.

BANNON'S PATENT LIDDED PIPE FOR STEAM CONDUITS

**P. BANNON PIPE CO., LOUISVILLE, KY.**

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### SEWER PIPE

Send your inquiries to the  
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MADE OF FIRE CLAY  
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SEWER PIPE—Concrete, Plain and Reinforced, 4" to 48" in diam., bell and spigot joint

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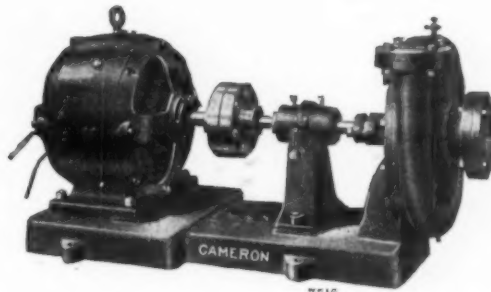
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*The Slogan of the Cameron—"Character: The Grandest Thing"*

## Get the Economical Pump Cameron Centrifugal



7516

Contractors will find no surer way to secure pumping economy than with "CAMERON" Centrifugals.

They have been designed and built with the special aim to produce a combination of high working value and low operating cost.

Every element in them is given the most careful attention during manufacture. There is no skimping of small details. Every part has strength beyond the utmost load that can fall upon it.

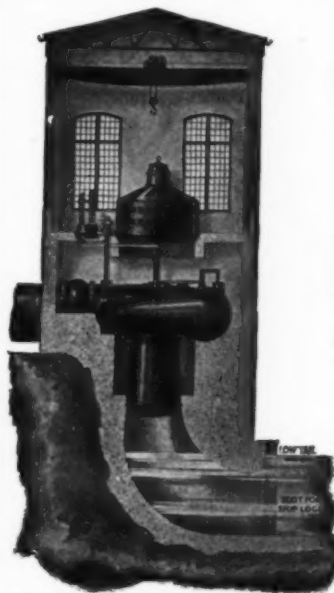
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Standard sizes carried in stock for prompt delivery.

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FROM**

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Recent tests of Smith Turbines have shown efficiencies of from 89% to over 90%. The engraving represents one of five units, each 17,000 H. P. at 514 R. P. M. under 600 feet head, now

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### Develop More Power

with a given quantity of water than any other turbine of the same dimensions, operating under the same conditions.

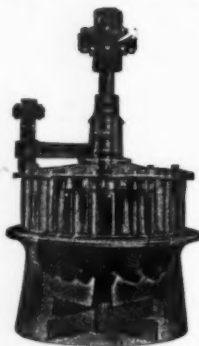
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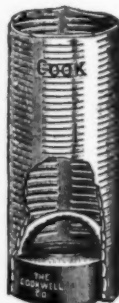
### Cook's System of Wells

For Cities, Towns, Villages,  
Railroads, Ice Plants, Brew-  
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### COOK'S PATENT BRASS TUBE WELL STRAINER

### COOK'S DEEP WELL PUMPING ENGINES

Estimates furnished upon application.  
Write for catalogue and prices.



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ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water  
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AFTER 28 YEARS' EXPERIENCE, we know we can give you  
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installing and erecting complete pumping plants, etc.

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Work guaranteed.

Estimates cheerfully given.

Prices Reasonable.

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A WELL  
TO DRILL?

ARTESIAN WELL DRILLERS. TEST BORING.

Pneumatic Water System Installed. Tanks and Towers Erected.  
Pumps, Windmills, Hydraulic Rams, Gas and Gasoline Engines.  
U. S. Government and Private References.

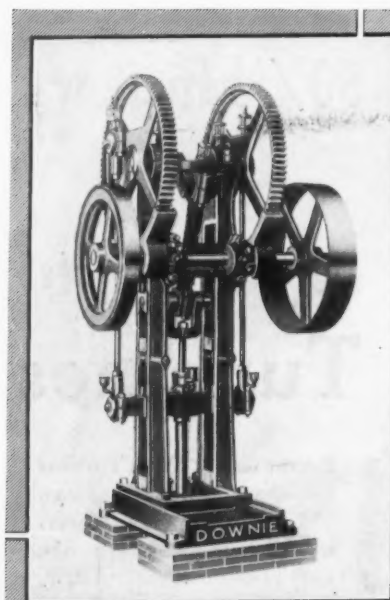
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## WELLS OIL GAS WATER

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For the well that  
is too deep, or  
the service that  
is too heavy for  
ordinary pumps  
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## DOWNIE DEEP WELL PUMPS

They are designed to lift large quantities of water from  
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We now build small double stroke heads to replace single  
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Catalog No. 6 describes pumps.

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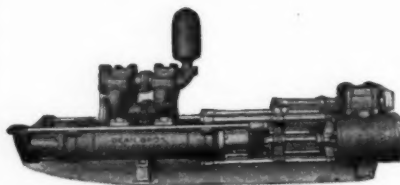
NOT IN THE PUMP TRUST.



Duplex, Electric Driven, gen-  
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Pumps for All  
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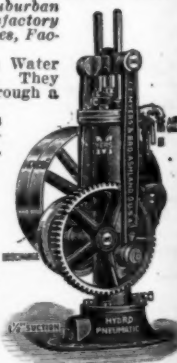
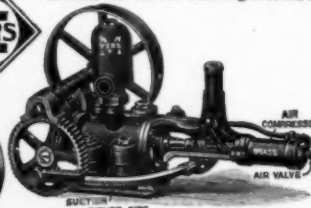
Duplex Steam Pump, outside end packed,  
suitable for working pressures  
up to 250 pounds

## MYERS HYDRO-PNEUMATIC PUMPS

Solve the Problem of Running Water for Suburban  
and Country Residences, and Afford a Satisfactory  
Water Supply for Laundries, Apartment Houses, Fac-  
tories, etc.

They form the important link in a Modern Water  
Supply System using a high-pressure tank. They  
pump the air and water at the same time through a  
single discharge line.

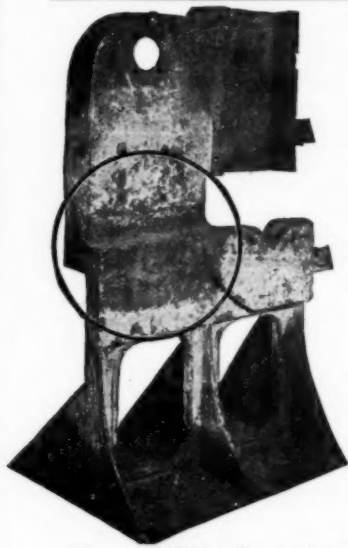
Hand, Windmill or Power Pumps  
according to the water require-  
ments. Write for Catalog No. HP13.



**F. E. MYERS & BRO.,** ASHLAND, OHIO  
Ashland Pump and Hay Tool Works.



## For Oxy-Acetylene Welding and Cutting Use Prest-O-Lite



### Do your welding on the spot

Think of the delays, the waste of time and material that would result if this shear press frame suddenly went out of commission in YOUR shops.

Think of the expense of dismantling and moving any heavy piece of machinery—the enormous cost of repairing or replacing by ordinary methods.

### Prest-O-Lite Acetylene Service

You can effect enormous savings by doing your own welding right on the job. Don't send the work out of the shop. Save that time and expense by employing a portable Prest-O-Lite welding outfit. The best apparatus money can buy—doubly convenient through the use of Prest-O-Lite Acetylene Service, furnishing a clean, pure, dry acetylene gas under pressure, ready for immediate use.

When a breakdown occurs, move the outfit to the job—turn on the gas, and you instantly get a blue-white flame of intense heat which produces perfect fusion of the metals, free from flaws or defects.

Write for data on "Oxy-Acetylene Welding and Cutting" as your first step toward enormous savings in equipment repairs. Write today.



**The Prest-O-Lite Company, Inc.,**  
809 Speedway, Indianapolis, Indiana

\$60 Cylinders furnished on liberal service plan. Truck extra.

## HOW \$400,000,000 WERE SPENT

In providing facilities for all-around city development. Have you a copy of the Baltimore Illustrated Edition of the Manufacturers Record, finest publication on Baltimore ever issued? Price 30c.

Manufacturers Record

Baltimore, Md.

## Foundry Supplies Facings, Sand and Clays

always in stock in large quantities for immediate shipment.

No order too small for our best attention.

Quality the best and prices right.

**J. W. PAXSON CO.**

1021 N. Delaware Ave.  
PHILADA., PA.

ALBANY, N. Y.  
BALTIMORE, MD.  
PROVIDENCE, R. I.



## Phoenix Iron Works Company

MEADVILLE, PA.

**Gray Iron and Semi-Steel  
Castings**

Permit us to bid on your requirements

High grade work at satisfactory prices



## Machine Screws

Supplied in One Gross  
Packages or in Bulk

A Complete Stock at All Times

## SPECIALISTS

In the Manufacture of

High-Grade Rivets and Special  
Screws of all kinds and from all  
grades of material.

If you favor us with one order  
we shall expect more.

Do not forget to send sample  
or sketch when requesting prices

Also state quantities desired.

Catalog for the asking.

**THE PROGRESSIVE  
MANUFACTURING CO.**

TORRINGTON, CONN

## Lebanon Valley Iron & Steel Co. Lebanon, Pa.

## Hot Pressed Nuts

U. S. Standard Blank or Tapped

Machine Bolts, Carriage Bolts,  
Track Bolts, Rivets, Spikes, Etc.

Refined Bar Iron

## Malleable Iron Castings

of Highest Quality

Annual Capacity 25,000 Tons.

Castings of all descriptions furnished.

Send Blueprints or Samples for Estimates.

**MISSOURI MALLEABLE IRON CO.**

EAST ST. LOUIS, ILL.

## MALLEABLE IRON CASTINGS

High Tensile Strength

Exceedingly Tough

We are equipped to make large and small castings.

Prompt Shipment Our Specialty

WRITE US.

**GENERAL MALLEABLE COMPANY, Warren, Ohio**

## The cheapest method of producing

**OXYGEN  
and HYDROGEN**

is by the

**I. O. C.  
SYSTEM**

Is practically automatic in operation;  
is safe, simple and costs very little  
for upkeep. Gases 100% efficient.

Numerous I. O. C. System installations of from 6 to 400 Generators each installed within the last three years.

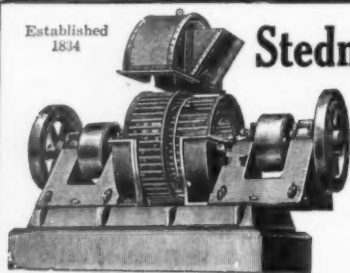
Write for references and full particulars.

**INTERNATIONAL OXYGEN COMPANY,**  
PITTSBURGH, PA., Park Bldg. Newark, N. J.

General Sales Office  
115 Broadway, NEW YORK  
PARIS, FRANCE, 40 Rue La Fayette



Single Unit  
I. O. C. Generator

Established  
1834

Opened To Show Working Parts.

**Stedman's Disintegrators**For Grinding and Pulverizing  
**OIL CAKES, TANKAGE,  
COAL, CLAY, BONES, Etc.**

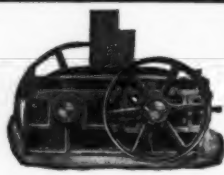
See our New Catalogue No. 12.

**STEDMAN'S**  
Foundry and Machine Works  
AURORA, INDIANA, U. S. A.*The* **C. O. BARTLETT AND SNOW CO.**  
**CLEVELAND, OHIO, U.S.A.**

We make elevating and conveying machinery, drop forged chain, shaking and revolving screens, car hauls, coal and ore conveyors, retarding conveyors, gypsum machinery, paint machinery, mining machinery, mechanical dryers, universal excavators and soft mud brick machinery.



BUCHANAN ALL-STEEL CRUSHER

**Rock Crushers  
Crushing Rolls  
Magnetic Separators  
Screens, Elevators**

BUCHANAN CRUSHING ROLLS

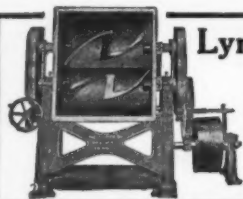
**C. G. BUCHANAN CO., Inc.,** 90 West St., New York, U. S. A.Southern Representative:  
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Bailey Bldg. Bessemer Bldg., Pittsburgh, Pa.**Indirect Heat ROTARY DRYERS**Especially suitable for drying all kinds of GRANULAR MATERIAL  
**HERSEY MANUFACTURING CO.,** South Boston, Mass.**GRINDING MACHINERY**  
of Every Description. Complete Installations.**GRUENDLER PAT. CRUSHER & PULVERIZER COMPANY**  
924-928 North First Street ST. LOUIS, MO.**PULVERIZING MACHINERY**  
for all kinds of materials**THE J. R. ALSING ENGINEERING CO.**

Ask for Catalog "M"

90 West St., New York, N. Y., U. S. A.

**Automatic  
Improved**

For All Materials.

**DRYERS**Economical—Efficient  
Great Capacity  
American Process Co.  
68 William St.  
New York.**Lynn-Superior Mixing Machinery**Best Designed and Most Efficient Mixing  
Principle for Thoroughly MixingDry Feeds, Powdered and Granular Material, Soaps, Polish  
Powders, Compounds, Pastes, Greases, Sausage Meats, Poultry  
and Cattle Feeds.

Built with or without steam jacket for heated mixtures.

Full Line of Bakery Machinery

The Lynn-Superior Co., 3256 Spring Grove Ave., Cincinnati, O.



ESTABLISHED 1847

**"STAR" MILLS**

Equipped with ESOPUS STONES

Make the old-fashioned "WATER GROUND TABLE MEAL"

Write for prices and discount

**B. F. STARR CO.**

Baltimore, Md.

# The Raymond System is Not Just a Grinding Mill— IT IS A METHOD



It does different things with different materials and under different conditions. What it does depends on the necessities of the case.

It will grind many materials finer at less cost than is possible with any other method.

In some materials it eliminates impurities without grinding at all.

In some materials it grinds and separates and insures a uniformity of product not possible of attainment by any other means.

It completely does away with all dust and dirt in ALL grinding and separating operations.

It has proven its economy and value for reducing Lime, Coal, Minerals, Ores, Phosphate Rock and scores of other materials.

The point is that it is worth your while to know all about the possible value to you of the

**RAYMOND PULVERIZING  
AIR SEPARATING SYSTEM**

if you want to reduce any material to a fine consistency with the greatest economy, to eliminate any impurities in such material, and to be sure of a uniform product.

In order to know what the Raymond System may do for you, just tell us what material you handle, and how fine you want to grind it.

**Raymond Bros. Impact Pulverizer Company**  
1304 N. Branch St., Chicago, Ill.Please send us your Book on Modern Methods of  
Pulverization.

Name.....

Street.....

City..... State.....

**Send for  
the****Raymond  
Book Now**We design special machinery and methods  
for Pulverizing, Grinding, Separating and Con-  
veying all powdered products. We manufacture  
Automatic Pulverizers, Roller Mills, Vacuum Air  
Separators, Crushers, Special Exhaust Fans and  
Dust Collectors. Send for the Book.



# OPPORTUNITIES IN THE SOUTH

— -FOR— —

## Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material upbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.

To keep in touch with Southern Development, read the Manufacturers Record.



**Splendid Factory Sites**  
in  
**Atlanta, Ga., Birmingham, Ala.**  
On A. B. & A. Right of Way  
Rare opportunities for manufacturing in the heart of the South's most progressive section.  
A. B. & A. is liberal in its policy and offers every inducement to industrial enterprises.  
Address Atlanta, Birmingham & Atlantic R. R.  
**ATLANTA, GA.**

### THE WEST POINT ROUTE

## Atlanta & West Point Railroad

THE WESTERN RAILWAY OF ALABAMA

Offers excellent locations for

Truck, Fruit, Stock and General Farming

Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities

Write for information.

E. S. CENTER, General Agent, ATLANTA, GA.

## Hosiery Mill Location

Will be glad to confer with interested parties regarding excellent location for hosiery mill. Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens of community interested in seeing development made.

### Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

To the

## MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and other raw materials lie in the regions of Georgia and Alabama which are traversed by the

### Central of Georgia Railway

Cheap electric power, numerous undeveloped water-powers, good home markets and excellent shipping facilities. Therefore, manufacturing conditions are ideal.

Many of the cities on the Central of Georgia Railway occupy advantageous positions for distributing warehouses, and a number of the larger northern and eastern manufacturers supply their southeastern trade from branch houses in these cities.

Full and detailed information upon application.

**J. M. MALLORY, Industrial Agent**  
SAVANNAH, GEORGIA

## Attractive Factory Sites

ON THE

## Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the Illinois Central Railroad

## ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA

IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a copy of one or all of these books. For free copies address

**J. C. CLAIR**

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

## **"Manufacturing Zone"** of **Portsmouth, Virginia**

The railroads having their termini at Portsmouth and Norfolk have built a belt line skirting the corporation line of the former city for a distance of several miles.

This belt line connects every railroad running into either city with every other one, and with all the docks and wharves at which the great ships that come into the harbor find berths.

The convenient access which this belt line gives to all the transportation lines has caused many manufacturing and industrial plants to locate upon it, and the territory through which it runs has thus come to be known as the "Manufacturing Zone."

The name is apt and proper, for it has now sixty-odd industrial establishments, employing 4500 men, and turning out products each year valued at many millions of dollars.

There are excellent sites for many more plants in this "Manufacturing Zone," and nowhere can they be found more conveniently located with respect to transportation by rail and water.

The railroads connected by the belt line furnish through their own lines and their connections 42,000 miles of trackage, reaching into every important commercial and population center of this country; the ships with whose docks it connects reach the world's leading ports.

Power for driving the motors of manufacturing concerns can be secured at attractive prices from the Virginia Railway & Power Co., saving not only in operating expenses, but in initial cost of machinery.

Raw materials for many branches of manufacturing can be secured easily and cheaply, because of the nearness of the points where they originate, and the unsurpassed facilities of transportation which Portsmouth enjoys.

Some of the things that can be profitably manufactured in Portsmouth, and for which excellent sites are offered by the "Manufacturing Zone," are the various kinds of cotton products and products of cottonseed, lumber and the many things made from lumber, such as barrels, boxes, crates, baskets, hampers, furniture, flooring and general inside finishing, buckets, tubs, wagons, buggies, brooms—their name is legion.

Those who are looking for eligible locations for manufacturing plants should investigate Portsmouth's offerings.

### **Virginia Railway and Power Company**

RICHMOND

PETERSBURG

NORFOLK

PORTSMOUTH

SUFFOLK

**VIRGINIA**





Residual Kaolin Mine, Dillsboro, N. C.

Cement Plant, Leeds, Ala.

**Factory**  
**Sites**

**Business**  
**Locations**

**Southern**  
**Farms**

**and Investments**

along the

# Southern Railway System

Choice Locations in Eleven States

Information Free

CHAS. S. CHASE  
Western Agent  
919 Chemical Bldg.  
St. Louis, Mo.

M. V. RICHARDS  
Land and Industrial Agent  
Room 52-A  
Washington, D. C.

F. T. CHARLES  
European Agent  
Whitehall House  
London, S. W. England

Southern Ry. — Mobile & Ohio R. R. — Southern Ry. in Mississippi — Georgia Southern & Florida Ry.



Tennessee Producers Marble Quarry near Knoxville.

Brown Iron Ore Washing Plant, Russellville, Ala.

## In the Center of A Nation's Industrial Activities

Have you ever carefully analyzed the strategic position occupied by the territory traversed by the Clinchfield in relation to some of the most important consuming markets of the country?

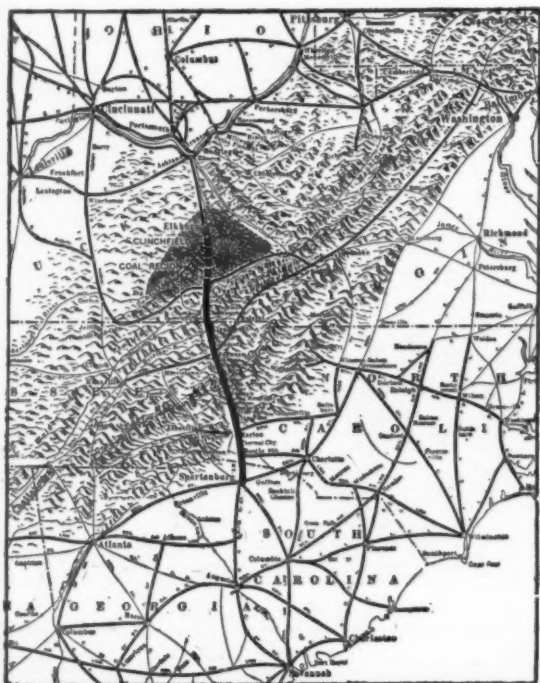
Have you realized that throughout that territory east of the Mississippi River this is the most important region, possessing a wide variety of raw materials and fine agricultural and timber lands still practically in a virgin state?

Have you appreciated the fact that this territory has a great beehive of industry to the West, a vast consuming area to the North, a splendid outlet to the markets of the world to the East, and a continually expanding industrial country to the South?

Do you know that the Clinchfield extends through the very heart of this region, running from Elkhorn in Kentucky through Eastern Tennessee and Western North Carolina to Spartanburg, S. C., and connects with the Chesapeake & Ohio, Louisville & Nashville, Norfolk & Western, Southern and Seaboard Air Line Railways, reaching North, East, South and West?

With these facts in mind, do you not grasp the strategic position possessed by this territory for reaching the country's large consuming markets?

Combine this splendid location with an abundant supply of coal, water-powers, diversified mineral deposits, virgin hardwood timber tracts, and other raw materials, white labor, an ideal climate, and ample railroad facilities, and where can be found a section that offers greater opportunities to the investor, the manufacturer, the farmer and the home-seeker?



*Our booklet, "The Land of Opportunities," will give you some idea of the richness of this newly opened country. Send for a copy.*

## Carolina, Clinchfield & Ohio Rwy.

**"THE ROAD OF OPPORTUNITY"**

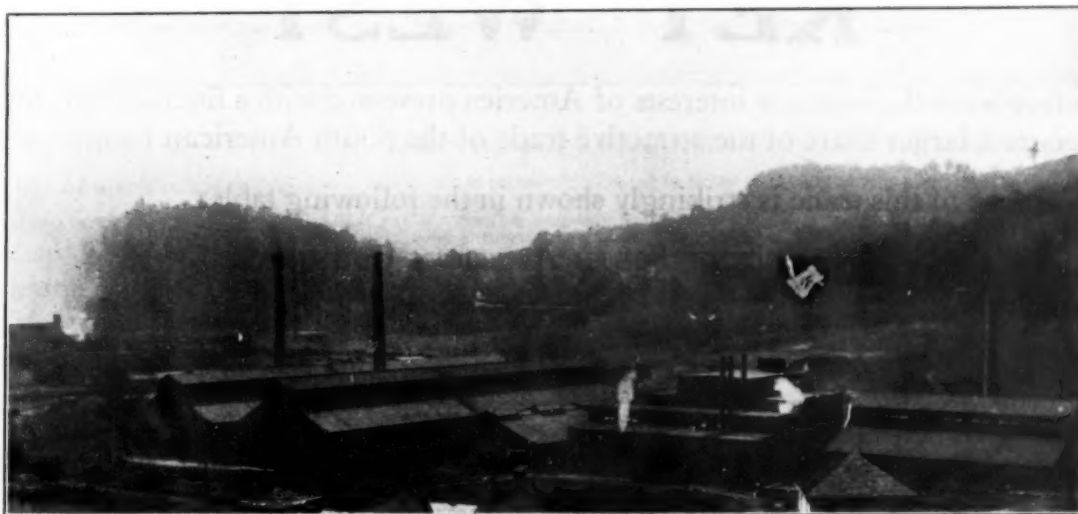
R. F. BREWER, Industrial Agent

**Johnson City, Tenn.**



## A State That Teems With Possibilities For Profitable Industrial Development

West Virginia, lying between the Atlantic Seaboard and the great Ohio River, fairly teems with opportunities for profitable industrial development.



A Large West Virginia Carbon Plant

No other State in the Union possesses more natural advantages in the way of raw materials necessary in the manufacture of the many articles used in the everyday affairs of life—those made of wood, and iron, and clay, and sand, and stone—the useful things upon which the human race so largely depends.

Nor does any other State rival it in the matter of economical manufacture—the turning of these raw materials into finished products.

In this transformation, which men call manufacturing, the two great requisites are heat and power.

Therefore, when you speak of heat and power your mind naturally turns to the place in which these may be obtained most conveniently and most economically, and that is West Virginia.

Add to cheap and plentiful raw materials and heat and power, easily accessible markets, and the best of facilities for reaching them, and the conditions need little more to render them ideal.

The location of West Virginia with respect to the centers of population East and West fulfills the former of these added requisites, and the Baltimore & Ohio Railroad, with its many lines and its superb equipment, furnishes the latter.

*Write and inquire concerning the many advantageous locations along the Baltimore & Ohio lines in West Virginia. The industrial Department will cheerfully furnish detailed information.*

## Baltimore & Ohio Railroad

J. H. STEWART, Agricultural Agent  
Morgantown, W. Va.

W. W. WOOD, Industrial Agent  
Baltimore, Md.

## Striking Figures Showing Trade Opportunities in **SOUTH AMERICA** And the Facilities for Reaching this Trade Through **KEY WEST**

Never before were the business interests of America presented with a finer opportunity than now to secure a larger share of the attractive trade of the South American countries.

The importance of this trade is strikingly shown in the following table:

COMMERCE OF SOUTH AMERICAN COUNTRIES.

	Total imports.	Imports from United States.	Total exports.	Exports to United States.
Argentina .....	\$371,384,000	\$57,058,000	\$463,578,000	\$31,257,000
Bolivia .....	19,671,000	1,826,000	35,809,000	156,000
Brazil .....	308,656,000	48,174,000	363,280,000	142,105,000
Chile .....	122,076,000	16,806,000	139,878,000	24,527,000
Colombia .....	23,965,000	7,612,000	32,222,000	15,833,000
Ecuador .....	10,653,000	2,764,000	13,718,000	3,965,000
Guianas, The .....	16,933,000	2,827,000	17,320,000	1,013,000
Paraguay .....	5,090,000	305,000	4,087,000	1,000
Peru .....	25,100,000	5,965,000	45,933,000	10,614,000
Uruguay .....	51,059,000	7,323,000	50,404,000	2,655,000
Venezuela .....	19,677,000	7,684,000	28,777,000	9,850,000
	<b>\$1,074,264,000</b>	<b>\$158,344,000</b>	<b>\$1,195,006,000</b>	<b>\$241,976,000</b>

An analysis of these figures shows that the United States sends to the South American countries but \$158,344,000, or 14.7 per cent. of their total of \$1,074,264,000 of imports, and receives from them but \$241,976,000, or 20.2 per cent. of their total exports of \$1,195,006,000.

Here is a commerce of \$2,269,270,000 almost at our very door, and we are getting less than one-sixth of it.

In studying your plans for reaching this rich field of trade, consider the splendid advantages of Key West.

**Key West is the nearest port to South America and the Panama Canal, which will make that city one of the foremost ports of the Gulf. It is certain to share heavily in all West Indian and South American trade development.**

**Study Key West's strategic location and advantages.**

Most of the big trunk-line railroads of the Southeast, with connections to all parts of the country, converge at Jacksonville, Florida, where the Florida East Coast Railway affords a direct line to Key West.

The situation, including the advantages of Key West, is worthy of the careful thought of every far-seeing business man in the United States, and this railroad will gladly furnish any further information desired.

## FLORIDA EAST COAST RAILWAY

**J. E. INGRAHAM, Vice-President**

**ST. AUGUSTINE, FLA.**



# Attractive Openings in the South

The farmer, the merchant, the manufacturer and the investor can find many profitable lines of endeavor open to effort in the South. No section of the United States offers so varied a line of attractive opportunities as does the Southern States.

The Coastal Plain, termed "The Great Winter Garden of the South," by the Government, and the delightful Piedmont section comprise millions of acres, attractive and capable of very splendid development. Enhancement of values is steady and will make investments now made very profitable.

## Lands

It is an item of much value to consider the present price of Southern lands as compared with other sections. Lands in the South can be purchased at very reasonable prices, and careful observation has determined their value. Intelligent effort will quickly produce these values.

The lands adapted to citrus growing and the earliest vegetables offered by Florida are unequalled. The southern part of the State matures and ships its farm products at a time when little competition is offered. This means splendid returns for "The Winter Garden Farm."

The Coastal Plain of Virginia, the Carolinas and Georgia is termed by the U. S. Government "The Great Winter Garden of the South." The variety of production, the length of the growing season, the ample rainfall, the proximity to good home markets; opportunity, by excellent transportation, to reach all the large centers of population, make it the most attractive now open to the man wanting land on which to grow a profitable variety of crops.

## Dairying and Live Stock

The South is peculiarly adapted to share in the solution of the future beef supply, which the rapidly growing population demands, and the highest authority, the U. S. Department of Agriculture, is quoted on this subject:

"The South is the only section of the United States where cattle can still be raised, fed and sold at a profit at from 5 to 6 cents per pound. The tick has been almost the only drawback to cattle production in the South, but its passing is simply a question of time and industrious perseverance.

"The hog is the beef steer's boon companion. He is increasing in numbers in the South, and Southern farms will in time supply the pork eaten by Southern farmers, and perhaps a good deal for the market as well. The wonderful development of the boys' corn clubs is now being supplemented by the organization of boys' pig clubs. The boys of the South have been shown how to grow corn; they are now being shown how to feed it to the hogs.

"Poultry and poultry products have a profound influence on the meat supply. Almost every section of the country can produce chickens. Every farm could maintain a larger and better flock. The South offers unusual opportunities for the production of poultry on the farm, on account of the early laying season."

Not alone is the South a cattle country because of its long growing season and its succulent natural grasses, but because its great cottonseed product is open to the cattle feeder; and the soil will produce all the legumes in abundance; and the construction of silos solves the cattle feeder's problem for the winter season.

DAIRYING must be profitable. Estimate of the consumption of Western butter by certain Southern States is indicated:

Virginia .....	9,506,583 lbs.
North Carolina .....	12,634,964 lbs.
South Carolina .....	14,247,842 lbs.

All of which can be produced profitably at home. Certainly the market is there; and the consequent enrichment of the soil will steadily increase the farm values.

## Manufacturing

In the South is a proven factor. At the front in the manufacture of cotton goods; its equable climate, ample and satisfactory labor supply; ready reach of markets, and the coming opening of trade in South America through the Panama Canal makes the South of peculiar attraction to many lines of manufacturing.

Its coal, and iron and other ores offer opportunity to the manufacturer of agricultural implements, harvesting machines, sugar cane and power mills, and the long line of manufactured iron articles so largely in demand.

Cement material in the greatest abundance of the very best quality and approximate to ready transportation. The cement industry has grown wonderfully; and there is every opportunity in the South for expansion along this line.

Water-power development is attracting very wide attention, and has reached out until the opportunity is offered to every manufacturing district to secure reasonable priced electric power for the operation of plants.

Timber, varied and splendid, exists in great abundance. The increased production of farm products, demanding crates and packages, makes a market of great value, and the woodworking plant is multiplying. Increased tobacco production demands the best hardwood for the container.

Banking facilities are of the best, and the progressive cities are taking a keen interest in all the developments of areas surrounding them; in manufacturing development; in better farming methods and greater production from the cultivated area. This is a stimulus to all of the factors for further advance.

## HOMESEEKERS' TICKETS TO

## "The Great Winter Garden of the South"

Cheap tickets have been provided for Eastern and Western people to investigate the many Southern opportunities, and if you will write us we will be glad to tell you about these tickets, the best means of reaching our section, and hope that this will have your early consideration.

## Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VIRGINIA

## CLASSIFIED INDEX OF ADVERTISEMENTS.

- Abrasive Materials.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Accountants.**  
Baltimore Audit Co., Baltimore, Md.  
Beaman, R. J., Cincinnati, Ohio.
- Accumulator. (Hydraulic.)**  
The French Oil Mill Mfg. Co., Piqua, Ohio.
- Acetylene Service.**  
Prest-O-Lite Co., Inc., The Indianapolis, Ind.
- Adding Machines.**  
Burroughs Adding Machine Co., Detroit, Mich.
- Agricultural Implements.**  
Myers & Bro., E. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
American Compressor & Pump Co., Baltimore, Md.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Clayton Air Compressor Works, Cambridge, Mass.  
General Electric Co., Schenectady, N. Y.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.  
Union Steam Pump Co., Battle Creek, Mich.
- Aluminum Products. (Bars, Sheets, Tubes.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**  
Frick Co., The, Waynesboro, Pa.  
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**  
Bailey-Lebby Co., Charleston, S. C.  
Dodge Mfg. Co., Milwaukee, Ind.
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Gatlin, W. R., Hopkinsville, Ky.  
Hunt, R. H., Chattanooga, Tenn.  
Milburn, Heister & Co., Washington, D. C.  
Robinson, W. F., Greensboro, N. C.  
Sirrins, J. E., Greenville, S. C.
- Architects' Supplies.**  
Starrett Co., L. S., Athol, Mass.  
Weber & Co., Philadelphia, Pa.
- Architectural Iron Work.**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Schreiber & Sons Co., The, Cincinnati, O.  
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**  
Bismarcker & Co., Memphis, Tenn.
- Asbestos.**  
Asbestos Protected Metal Co., Beaver Falls, Pa.  
John-Manville Co., H. W., New York, N. Y.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**  
Asbestos Protected Metal Co., Beaver Falls, Pa.
- Asphalt.**  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Gulf Refining Co., Pittsburgh, Pa.  
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**  
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**  
Cummer & Son Co., F. D., The, Cleveland, Ohio.
- Auctioneers.**  
Freeman & Co., Samuel T., Philadelphia, Pa.
- Automobiles. (Electric Passenger.)**  
General Vehicle Co., Long Island City, N. Y.
- Automobiles. (Second Hand.)**  
Mar-Dei Mobile Co., Baltimore, Md.
- Axles. (See Car Wheels, Axles and Trucks.)**
- Babbit Metal. [See Anti-Friction Metal.]**
- Bakelite Dilecto.**  
Continental Fibre Co., Newark, Del.
- Bakers' Machinery.**  
Lynn-Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**  
Delaware Trust Co., Wilmington, Del.  
Electric Bond & Share Co., New York, N. Y.  
Halsey & Co., N. W., New York, N. Y.  
Lienman & Co., F. J., New York, N. Y.  
Mercantile Trust & Deposit Co., Balto., Md.  
New First National Bank, Columbus, O.  
Nuveen & Co., John, Chicago, Ill.  
Peabody, Houghteling & Co., Chicago, Ill.  
Southern States Development Co., New York, N. Y.
- Banks.**  
First National Bank, Baltimore, Md.  
First Nat'l Bank of Key West, Key West, Fla.  
First National Bank, Richmond, Va.  
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.  
New First National Bank, Columbus, Ohio.  
National Exchange Bank, Baltimore, Md.  
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**  
Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggett & Co., Baltimore, Md.  
Meyers Mfg. Co., F. J., Hamilton, O.  
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**  
American Bridge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**  
Bourne-Fuller Co., The, Cleveland, Ohio.  
Carnegie Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars. (Merchant Rounds.)**  
Gulf States Steel Co., Birmingham, Ala.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**  
American Steel & Wire Co., Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Laclede Steel Co., St. Louis, Mo.  
Trussed Concrete Steel Co., Youngstown, O.
- Head. (Metal Corner.)**  
Penn Metal Co., Boston, Mass.
- Bearings. (Oilless.)**  
Metaline Co., Long Island City, N. Y.
- Bedford Stone.**  
Bedford Steam Stone Works, Bedford, Ind.
- Bells and Gongs.**  
National Tube Co., Pittsburgh, Pa.
- Belting. (Leather, Canvas, Rubber.)**  
American Supply Co., Providence, R. I.  
Bailey-Lebby Co., Charleston, S. C.  
Baltimore Belting Co., Baltimore, Md.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Belting Co., Baltimore, Md.  
Draud Oak Belting Co., Inc., Baltimore, Md.  
Gandy Belting Co., Baltimore, Md.  
Goodyear Tire & Rubber Co., Akron, Ohio.  
Graton & Knight Mfg. Co., Worcester, Mass.  
Main Belting Co., Phila., Pa.
- Belting. (Chain.)**  
Schlenger Co., Chas. A., New York, N. Y.  
Smith-Courtney Co., Richmond, Va.
- Belting. (Chain.)**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Calkwell & Sons Co., H. W., Chicago, Ill.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown, (Philadelphia) Pa.
- Belt Cement.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Conveyors.**  
Jeffery Mfg. Co., Columbus, O.
- Belt Dressing.**  
Dixon Crucible Co., Joseph, Jersey City, N. J.  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing. (Leather.)**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Belt Lacing and Supplies. [See Belting, Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**  
Church & Dwight Co., New York, N. Y.
- Billets.**  
Gulf States Steel Co., Birmingham, Ala.
- Bins. (Steel)**  
Merritt & Co., Camden, N. J.
- Blackboards. (Slate.)**  
East Bangor Con. Slate Co., The, East Bangor, Pa.  
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Grooved.)**  
American Groosote Works, New Orleans, La.
- Block Fillers.**  
Barber Asphalt Paving Co., Phila., Pa.  
Barrett Mfg. Co., Phila., Pa.  
Standard Oil Co., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**  
American Blower Co., Detroit, Mich.  
Buffalo Forge Co., Buffalo, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
General Electric Co., Schenectady, N. Y.  
Green Fuel Economizer Co., Mattawan, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Sturtevant Co., H. F., Hyde Park, Boston, Mass.
- Blow Torches. (For Soldering and Brazing.)**  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.
- Bluing Ovens.**  
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Boilers.**  
Habecock & Wilcox Co., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Coastville Boiler Works, Coastville, Pa.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Erie City Iron Works, Erie, Pa.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Harris Bros. Co., Chicago, Ill.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Leakout Boiler & Mfg. Co., Chattanooga, Tenn.  
Loudard Iron Works, Augusta, Ga.  
Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works, Burlington, Ia.  
New York Central Iron Works Co., Hagerstown, Md.  
North Iron Works Co., Meadville, Pa.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Val & Murdoch Iron Works, Charleston, S. C.  
Vogt Machine Co., Henry, Louisville, Ky.  
Walsh & Weidner Boiler Co., Chattanooga, Tenn.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Boiler Covering.**  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**  
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Boils, Nuts, Rivets, Studs and Washers.**  
Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
Progressive Mfg. Co., Torrington, Conn.  
Republie Iron & Steel Co., Youngstown, O.  
Upson Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**  
Fidelity & Deposit Co. of Balto., Baltimore, Md.
- Bottling Outfits.**  
Viller Mfg. Co., Milwaukee, Wis.
- Brass Goods.**  
Bailey-Lebby Co., Charleston, S. C.  
Huckeye Iron & Brass Works, Dayton, O.  
Lunkenheimer Co., The, Cincinnati, Ohio.  
Powell Co., Wm., Cincinnati, O.
- Brass Railing and Grilles.**  
Newman Mfg. Co., Cincinnati, Ohio.
- Brewers' Machinery.**  
Viller Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**  
Hood Brick Co., B. Millin, Atlanta, Ga.
- Brick. (Building.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.  
Dixie Brick & Tile Co., Perry, Tenn.  
Hood Brick Co., B. Millin, Atlanta, Ga.  
Hydraulic Press Brick Co., St. Louis, Mo.  
Kingsport Brick Corp., Johnson City, Tenn.  
Scott Brick Co., Alex. A., Knoxville, Tenn.  
Southern Face Brick Exchange, Birmingham, Ala.  
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**  
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**  
Dixie Brick & Tile Co., Perry, Tenn.  
Edison Fireproofing & Brick Works, Kilian, S. C.  
Louisville Fire Brick Works, Highland Park, Ky.  
Mexico Brick & Fire Clay Co., Mexico, Mo.  
Pomona Terra-Cotta Co., Pomona, N. O.  
Standard Brick Co., Macon, Ga.  
Stevens' Sons Co., H., Macon, Ga.  
Union Mining Co., Mt. Savage, Md.
- Brick. (Magnesia.)**  
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick. (Paving.)**  
Carlyle Paving Brick Co., Portsmouth, O.  
Copeland-Ingles Shale Brick Co., Birmingham, Ala.  
Dunn Wire-Cut-Log Brick Co., Conneaut, Ohio.  
Southern Clay Mfg. Co., Chattanooga, Tenn.  
Standard Brick Co., Macon, Ga.
- Brick. (Silica.)**  
Dixie Brick & Tile Co., Perry, Tenn.  
Harbison-Walker Refractories Co., Pittsburgh, Pa.
- Brick and Clayworking Machinery and Supplies.**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Fornholtz Brick Machinery Co., St. Louis, Mo.  
Freese & Co., E. M., Galton, O.  
Steinle & Sons, J. C., Statesville, N. O.
- Bridges. (Concrete.)**  
Luten, Daniel B., Indianapolis, Ind.  
Requarth Co., C. W., Charlotte, N. O.  
Turner, C. A. P., Minneapolis, Minn.
- Bridges. (Rolling Lift.)**  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.
- Bridges. (Steel.)**  
American Bridge Co. of New York, N. Y.  
Austin Bros., Atlanta, Ga.  
Belmont Iron Works, Philadelphia, Pa.  
Champion Bridge Co., Wilmington, Ohio.  
Chicago Bridge & Iron Works, Chicago, Ill.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Oregonia Bridge Co., Lebanon, Ohio.  
Richmond Structural Steel Co., Richmond, Va.  
Scherzer Rolling Lift Bridge Co., Chicago, Ill.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Bridge and Structural Iron Paints.**  
Chattanooga Paint Co., Chattanooga, Tenn.
- Brimstone.**  
Union Sulphur Co., New York, N. Y.
- Brushes.**  
Felton Brush Co., D. D., The, Atlanta, Ga.
- Buckets. (Bottom-dumping for Concrete, Fertilizer, etc.)**  
Stuebner Iron Works, G. L., Long Island City, N. Y.
- Buckets. (Clam Shell, Orange Peel, etc.)**  
Hayward Company, New York, N. Y.  
Williams Company, G. H., Cleveland, Ohio.
- Buckets. (Dredging, Excavating, Sewer, etc.)**  
Hayward Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
Williams Co., The G. H., Cleveland, O.
- Buckets. (Grab.)**  
Hunt Co., Inc., C. W., West New Brighton, N. Y.
- Buckets. (Ore Handling.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Hayward Co., New York, N. Y.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Williams Co., The G. H., Cleveland, O.
- Buhr Stones.**  
Starr Co., B. F., Baltimore, Md.
- Builders and Contractors.**  
Austin Bros., Atlanta, Ga.  
Caldwell-Wingate Co., Atlanta, Ga.  
Sellers-Breck Construction Co., St. Louis, Mo.  
Stone & Webster Eng. Corp., Boston, Mass.  
Turner, C. A. P., Minneapolis, Minn.  
White Companies, J. G., New York, N. Y.
- Building Stone.**  
Bedford Steam Stone Works, Bedford, Ind.
- Building Supplies.**  
Harris Bros. Co., Chicago, Ill.  
Southern Building Material Co., Norfolk, Va.
- Burners. (Enclosed Flame Case.)**  
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Burners. (Oil.) [See Fuel Oil Equipments.]**
- Bushings. (Oilless, for Loose Pulleys.)**  
Metaline Co., Long Island City, N. Y.
- Cables.**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Hascom Rope Co., St. Louis, Mo.  
Roebbing's Sons Co., John A., Trenton, N. J.
- Cables. (Underground.)**  
American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cables and Wires. (Insulated.)**  
Safety Insulated Wire & Cable Co., New York, N. Y.
- Cableways. (Overhead Suspension.)**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Hascom Rope Co., St. Louis, Mo.  
Consolidated Tramway Co., New York, N. Y.  
Flory Mfg. Co., S., Bangor, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Roebbing's Sons Co., John A., Trenton, N. J.
- Can and Box Making Machinery. (Tin)**  
Biss Co., E. W., Brooklyn, N. Y.
- Canning Machinery and Supplies.**  
Robins & Co., A. E., Baltimore, Md.  
Sprague Canning Machinery Co., Chicago, Ill.
- Caps. (Roofing.)**  
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Carborundum Paper and Cloth.**  
Carborundum Co., Niagara Falls, N. Y.
- Cars. (Dump, Industrial, Logging and Mine.)**  
Austin Mfg. Co., Chicago, Ill.  
Chase Fdry. & Mfg. Co., Columbus, O.  
Curd, Geo. H., Cincinnati, Ohio.  
Easton Car & Construction Co., Easton, Pa.  
Electric Wheel Co., Quincy, Ill.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Western Wheelbarrow Co., Aurora, Ill.
- Cars. (Motor, Gasoline.)**  
White Co., The, Cleveland, Ohio.
- Cars. (Passenger and Freight.) [See Railroad Equipment and Supplies.]**
- Car Wheels, Axles and Trucks.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
- Cast Iron Pipe. [See Pipe.] [Cast Iron]**
- Castings. (Aluminum.)**  
Aluminum Company of America, Pittsburgh, Pa.
- Castings. (Brass and Bronze.)**  
McKenna Bros. Brass Co., Pittsburgh, Pa.  
Triumph Electric Co., Cincinnati, O.
- Castings. (Gray Iron.)**  
Columbian Iron Works, Chattanooga, Tenn.  
Georgia Car & Locomotive Co., Atlanta, Ga.  
Glanorgan Pipe & Foundry Co., Lynchburg, Va.  
Lynchburg Foundry Co., Lynchburg, Va.  
Phoenix Iron Works Co., Meadville, Pa.  
Poele Engineering & Machine Co., Baltimore, Md.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Val & Murdoch Iron Works, Charleston, S. C.  
Westbrook Elevator Co., Danville, Va.
- Castings. (Malleable Iron and Steel.)**  
Columbus Malleable Iron Co., Columbus, Ohio.  
General Malleable Co., Warren, O.  
Marion Malleable Iron Works, The, Marion, Ind.  
Missouri Malleable Iron Co., East St. Louis, Ill.
- Castings. (Municipal.)**  
Chickasaw Iron Work, Memphis, Tenn.
- Castings. (Steel.)**  
Allen American Manganese Steel Co., Edge, Chicago, Ill.  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Phoenix Iron Works Co., Meadville, Pa.  
Riverside Steel Casting Co., Newark, N. J.
- Ceilings. (Metal.)**  
Edwards Manufacturing Co., Cincinnati, O.  
Keighley Metal Cell. & Mfg. Co. S., Pittsburgh, Pa.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.  
Muschel-Edwards Corrugating Co., Covington, Ky.
- Cement.**  
Clinchfield-Portland Cem. Corp., Kingsport, Tenn.  
Dixie Portland Cement Co., Chattanooga, Tenn.  
Hartman Cement Co., Wm. G., Philadelphia, Pa.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Kosmos Portland Cement Co., Inc., Louisville, Ky.  
Lehigh Portland Cement Co., Allentown, Pa.  
Security Cement & Lime Co., Hagerstown, Md.  
Southern States Portland Cem. Co., Rockmart, Ga.
- Cement Machinery.**  
Aising Engineering Co., J. R., New York, N. Y.  
Power & Mining Machinery Co., Cudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Central American Trade.**  
El Comercio, New York, N. Y.
- Chains. (Dredge, Quarry, Steam Shovel.)**  
Weimer Chain & Iron Co., Lebanon, Pa.
- Chemists. (Analytical and Consulting.)**  
Davis, Geo. C., Philadelphia, Pa.  
Froehling & Robertson, Richmond, Va.  
Hunt & Co., Robt. W., Chicago, Ill.  
Pittsburgh Testing Laboratory, Pittsburgh, Pa.  
Wiley & Co., Baltimore, Md.
- Chloride Accumulator.**  
Electric Storage Battery Co., The, Philadelphia, Pa.
- Chucks.**  
Morris Twist Drill & Mch. Co., New Bedford, Mass.
- Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]**
- Clamps. (For Concrete Forms.)**  
Sterling Wheelbarrow Co., Milwaukee, Wis.
- Clayworking Machinery. [See Brick and Clayworking Machinery and Supplies.]**
- Cleansing Compound. (Floors, Etc.)**  
India Alkali Works, Boston, Mass.
- Clocks. (Watchman.)**  
Watchman's Clock & Supply Co., New York, N. Y.
- Clutches. (Friction.)**  
Medart Patent Pulley Co., St. Louis, Mo.  
Moore & White Co., The, Philadelphia, Pa.
- Coal.**  
Clinchfield Coal Corp., Dante, Va.  
Clinchfield Fuel Co., Spartanburg, S. C.  
Consolidation Coal Co., Inc., New York, N. Y.  
Tennessee Coal, Iron & R. R. Co., P'ough'm, Ala.
- Coal Cutters.**  
Jeffery Mfg. Co., Columbus, O.
- Coal Handling Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Guarantee Construction Co., New York, N. Y.  
Hayward Co., New York, N. Y.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Jeffery Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Stuebner Iron Works, G. L., Long Island City, N. Y.  
Weller Mfg. Co., Chicago, Ill.
- Coal Tar and By-Products.**  
Harrell Mfg. Co., Philadelphia, Pa.
- Coal Tippers.**  
American Bridge Co. of New York, N. Y.
- Coke.**  
Tennessee Coal, Iron & R. R. Co., P'ough'm, Ala.
- Colleges and Schools.**  
Rensselaer Polytechnic Institute, Troy, N. Y.
- Colleges. (Technical.)**  
Rensselaer Polytechnic Institute, Troy, N. Y.
- Columns. (Porch, Interior, Pergola.)**  
Nickerson Mfg. Co., Knoxville, Tenn.
- Concrete Construction. (Reinforced.)**  
Berry-Fortune Construction Co., Eatonton, Ga.  
Ester-Creighton Coal Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Jeffery Mfg. Co., Columbus, O.  
Requarth Co., C. W., Charlotte, N. O.  
Trussed Concrete Steel Co., Youngstown, O.  
Turner, C. A. P., Minneapolis, Minn.
- Concrete Products.**  
Gray Concrete Co., Thomasville, N. C.
- Concrete Curb Protector. (Steel.)**  
Steel Protected Concrete Co., Philadelphia, Pa.
- Concrete Mixers. [See Mixers. (Concrete).]**
- Concrete Reinforcing Bars.**  
Bourne-Fuller Co., The, Cleveland, Ohio.  
Carnegie Steel Co., Pittsburgh, Pa.  
Gulf States Steel Co., Birmingham, Ala.  
Hoffman & Co., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Laclede Steel Co., St. Louis, Mo.  
Republie Iron & Steel Co., Youngstown, O.  
Sweet's Steel Co., Williamsport, Pa.  
Trussed Concrete Steel Co., Youngstown, O.
- Concrete Reinforcing Bar Couplings.**  
Marion Malleable Iron Works, Marion, Ind.
- Concrete Reinforcing Wire and Wire Fabric.**  
Aronstam Co., L., Columbia, S. C.  
Roebbing's Sons Co., John A., Trenton, N. J.
- Condensers.**  
Alberger Pump & Condenser Co., New York, N. Y.  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Crescent-Morris Co., Philadelphia, Pa.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Westinghouse Machine Co., Pittsburgh, Pa.  
York Mfg. Co., York, Pa.
- Conductor Pipe.**  
Edwards Mfg. Co., Cincinnati, O.  
Hussey & Co. O. G., Pittsburgh, Pa.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Contractors. (Concrete.)**  
Berry-Fortune Construction Co., Eatonton, Ga.



**Contractors. (Hydro-Electric Developments.)**  
Requarth Co., C. W., Charlotte, N. C.

**Contractors. (Water Supply.)**  
Layne & Bowler Co., Houston, Tex.

**Contractors' Machinery and Supplies.** [See also Hoisting Machinery.]

American Clay Machinery Co., The, Bucyrus, Ohio.  
American Hoist & Derrick Co., St. Paul, Minn.  
Austin Mfg. Co., Chicago, Ill.  
Bartlett & Snow Co., The John F., Ravenna, O.  
Contractors' Service Co., New York, N. Y.  
Cord, Geo. B., Cincinnati, O.  
Flory Mfg. Co., S., Bangor, Pa.  
Hart Bros. Steel & Rail Co., Pittsburgh, Pa.  
Hart Metal & Supply Co., New York, N. Y.  
Milburn Co., Alex. N., Baltimore, Md.  
Monaghan Mch. Co., Chicago, Ill.  
National Hoisting Engine Co., Harrison, N. J.  
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.  
Pipe & Contractors' Supply Co., New York, N. Y.  
Sherwood, E. C., New York, N. Y.  
Sterling Machinery Co., New York, N. Y.

**Conveying and Elevating Machinery.**  
Bartlett & Snow Co., C. O., Cleveland, O.  
Caldwell & Son Co., H. W., Chicago, Ill.  
Consolidated Tramway Co., New York, N. Y.  
Flory Mfg. Co., S., Bangor, Pa.  
Guarantee Construction Co., New York, N. Y.  
Hunt Co., C. W., Inc., West New Brighton, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Link-Belt Co., Nicetown, (Philadelphia) Pa.  
Mathews Gravity Carrier Co., Ellwood City, Pa.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Weller Mfg. Co., Chicago, Ill.

**Cooperage Stock and Box Shook Machinery.**  
Gerlach Co., Peter, Cleveland, O.

**Coppersmith.**  
Hoffman-Ablers Co., Cincinnati, Ohio.  
McMillan Bros., Jacksonville, Fla.

**Cordage.**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Waterbury Co., New York, N. Y.

**Core Ovens.**  
Oran Equipment & Mfg. Co., The, New Haven, Conn.

**Corner Bead. (Metal.)**  
Penn Metal Co., Boston, Mass.

**Corn-Mill Machinery.**  
Kerfke & Marmon Co., Indianapolis, Ind.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

**Cotton Oil and Products.**  
American Cotton Oil Co., New York, N. Y.

**Cotton Yarns. (Commission Merchants.)**  
Paulson, Lynkroum & Co., New York, N. Y.

**Cotton-Jin Machinery.**  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
Gibbs Machine Co., Inc., Columbia, S. C.  
Murray Co., The, Atlanta, Ga.

**Cotton-Mill Machinery.**  
Draper Co., Hopedale, Mass.  
Hason Machine Works, Taunton, Mass.  
Saco-Lowell Shop, Boston, Mass.  
Whitinsville Spinning Ring Co., Whitinsville, Mass.

**Cotton-Mill Supplies.**  
American Supply Co., Providence, R. I.  
Whitinsville Spinning Ring Co., Whitinsville, Mass.

**Cottonseed-Oil Machinery.**  
Buckeye Iron & Brass Works, Dayton, O.  
Burruss Engineering Co., Atlanta, Ga.  
Cardwell Machine Co., Richmond, Va.  
Carver Cotton Gin Co., East Bridgewater, Mass.  
Continental Gin Co., Birmingham, Ala.  
French Oil Mill Machinery Co., Piqua, O.  
Murray Co., The, Atlanta, Ga.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Counting and Weighing Machines. (For Industrial Plants.)**  
National Scale Co., Chicopee Falls, Mass.

**Couplings.**  
American Spiral Pipe Works, Chicago, Ill.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Wood's Sons Co., T. R., Chambersburg, Pa.

**Couplings. (Car.)**  
National Tube Co., Pittsburgh, Pa.  
Weimer Chain & Iron Co., Lebanon, Pa.

**Couplings. (Hose, Air, Gas, Steam and Water.)**  
National Tube Co., Pittsburgh, Pa.

**Couplings. (For Reinforcing Bars.)**  
Marion Malleable Iron Works, Marion, Ind.

**Coverings. (Pipe, Boiler, etc.)**  
Johns-Manville Co., H. W., New York, N. Y.  
Southern Asbestos Mfg. Co., Inc., Richmond, Va.

**Cranes. (Locomotive.)**  
American Hoist & Derrick Co., St. Paul, Minn.  
Ohio Locomotive Crane Co., Bucyrus, O.

**Cranes. (Traveling, Hand, Power, Hydraulic.)**  
Lane Mfg. Co., Montpelier, Vt.  
Spedel, J. G., Reading, Pa.

**Crayons.**  
Georgia Talc Co., Asheville, N. C.  
Lowell Crayon Co., Lowell, Mass.

**Crosscutting Equipment.**  
Casey-Hedges Co., Chattanooga, Tenn.  
Struthers-Wells Co., Warren, Pa.  
Walsh & Weider Boiler Co., Chattanooga, Tenn.

**Crosscutting Tools.**  
American Crosscut Works, New Orleans, La.  
Internal Crosscut & Cons. Co., Galveston, Tex.  
National Lumber & Crosscut Co., Texarkana, Ark.  
Southern Crosscutting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossarms and Pins.**  
Western Electric Co., New York, N. Y.

**Crossarms. (Crossed.)**  
American Crosscut Wks., New Orleans, La.  
Internal Crosscut & Cons. Co., Galveston, Tex.  
National Lumber & Crosscutting Co., Texarkana, Ark.  
Southern Crosscutting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossings. [See Railroad Frogs and Switches]**

**Crosstie Machine.**

Standard Portable Saw Mill Co., New Orleans, La.

**Crossties. (Crossed.)**  
American Crosscut Works, New Orleans, La.  
Internal Crosscut & Cons. Co., Galveston, Tex.  
National Lumber & Crosscut Co., Texarkana, Ark.  
Southern Crosscutting Co., Ltd., Slidell, La.  
Southern Wood Preserving Co., Atlanta, Ga.

**Crossties (Steel.)**  
Carnegie Steel Co., Pittsburgh, Pa.

**Crushed Stone.**  
American Ballast Co., Knoxville, Tenn.  
Balfour Quarry Co., Asheville, N. C.  
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.  
Weston Brook Quarry Co., Columbia, S. C.

**Crushers. (Corn and Cob.)**  
Grumfield Pat. Crusher & Pulv. Co., St. Louis, Mo.  
Jeffrey Mfg. Co., Columbus, O.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Crushers. (Rock.)**  
Austin Mfg. Co., Chicago, Ill.  
Buchanan Co., Inc., C. G., New York, N. Y.  
Power & Mining Machinery Co., Cudahy, Wis.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Universal Road Mfg. Co., Kingston, N. Y.  
Western Wheel Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

**Crushing and Pulverizing Machinery.**  
Aising Engineering Co., J. R., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Bartlett & Snow Co., C. O., Cleveland, O.  
Buchanan Co., Inc., C. G., New York, N. Y.  
Grumfield Pat. Crusher & Pulv. Co., St. Louis, Mo.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Stedman's Foundry & Machine Works, Aurora, Ind.  
Western Wheel Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.

**Culvert Pipe. (Cast Iron.)**  
American Cast Iron Pipe Co., Birmingham, Ala.  
Chow & Sons, James H., Chicago, Ill.  
Donaldson Iron Co., Evans, Pa.  
Glanorgan Pipe & Foundry Co., Lynchburg, Va.  
Lynchburg Foundry Co., Lynchburg, Va.  
Massillon Iron & Steel Co., Massillon, Ohio.  
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.  
Wood & Co., R. D., Philadelphia, Pa.

**Culverts. (Corrugated Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Armco Culvert Publicity Bureau, Cincinnati, O.  
Atlas Metal Works, Dallas, Tex.  
Birmingham Metal Products Co., Birmingham, Ala.  
Canton Culvert Co., The, Canton, O.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.  
Harris Bros. Co., Newport, Ky.  
Lane Star Culvert Co., Houston, Tex.  
Moesch-Edwards Corrugating Co., Covington, Ky.  
National Corrugated Culvert Mfg. Co., Warren, Pa.  
New Orleans Roofing & Metal Wks., New Orleans, La.

**Culverts. (Vitrified Pipe.)**  
Southern Sewer Pipe Co., Birmingham, Ala.  
Stevens Sons Co., H., Macon, Ga.

**Cupola Furnaces.**  
Paxson Co., J. W., Philadelphia, Pa.

**Curb. (Granite.)**  
Byrd Bros., Salisbury, N. C.

**Curb Protector. (Steel.)**  
Steel Protected Concrete Co., Philadelphia, Pa.

**Cuts. (Half-tone, Line, etc.)**  
Baltimore-Md. Engraving Co., Baltimore, Md.

**Cutter Heads. (Woodworking.)**  
Shimer & Sons, Samuel J., Milton, Pa.

**Cutter Grinders.**  
Vitrified Wheel Co., Westfield, Mass.

**Cutting. (Oxy-Acetylene Process.)**  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

**Dams. (Reinforced Concrete.)**  
Berry-Fortune Construction Co., Entonton, Ga.

**Derricks and Derrick Fittings.**  
American Hoist & Derrick Co., St. Paul, Minn.  
Byers Mach. Co., The John F., Ravenna, O.  
Hayward Co., The, New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.

**Designers and Illustrators. (Printed Matter.)**  
Baltimore, Md. Engraving Co., Baltimore, Md.

**Distilling Apparatus.**  
Hoffman-Ablers Co., Cincinnati, Ohio.

**Ditching Machinery.**  
American Hoist & Derrick Co., St. Paul, Minn.  
Fairbanks Steam Shovel Co., Marion, O.  
Gade Excavating Co., The, Iowa Falls, Iowa.  
Hayward Co., The, New York, N. Y.  
Marion Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.  
Williams Co., The, G. H., Cleveland, O.

**Doors. (Steel Rolling.)**  
Kinross Mfg. Co., Columbus, O.

**Doors. (Tin Clad.)**  
Victor Mfg. Co., Newburyport, Mass.

**Doors, Sash and Blinds.**  
Columbus Iron Works, Columbus, Ga.

**Draftsmen's Supplies.**  
Weber & Co., F., Philadelphia, Pa.

**Dredge Chains.**  
Weimer Chain & Iron Co., Lebanon, Pa.

**Dredge Cutters.**  
Norborn Engineering Co., Philadelphia, Pa.

**Dredges. [See Excavating Machinery.]**

**Drills. (Electric.)**  
Fort Wayne Electric Works, Fort Wayne, Ind.

**Drills. (Pneumatic.) [See also Drills Rock and Mining.]**

**Drills. (Prospecting.)**  
Fort Wayne Electric Works, Madison, Wis.  
Keystone Steam Well Mach. Co., Beaver Falls, Pa.

**Drills. (Rock and Mining.)**  
Fort Wayne Electric Works, Madison, Wis.  
Independent Pneumatic Tool Co., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Wickes Bros., Jersey City, N. J.

**Drills. (Twist.)**  
McKenna Bros. Brass Co., Pittsburgh, Pa.  
Morse Twist Drill & Mch. Co., New Bedford, Mass.

**Drive Well Points and Well Supplies.**  
National Tube Co., Pittsburgh, Pa.

**Drop Forgings.**

American Spiral Pipe Works, Chicago, Ill.

**Drop Forging Machinery.**

Biles Co. E. W., Brooklyn, N. Y.

**Dry Docks. (Builders of)**

American Bridge Co., of New York, N. Y.

**Drying Machinery.**

American Process Co., New York, N. Y.  
Bailey-Lobby Co., The, Charleston, S. C.  
Buffalo Forge Co., Buffalo, N. Y.  
Catesville, Boiler Works, Catesville, Pa.  
Cummer & Son Co., F. D., The, Cleveland, Ohio  
Heresy Manufacturing Co., South Boston, Mass.  
Ruggles-Cole Engineering Co., New York, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

**Dry Kilns.**

Buffalo Forge Co., Buffalo, N. Y.

Moore Dry Kiln Co., L., Jacksonville, Fla.

**Dry Kiln Equipment.**

Moore Dry Kiln Co., L., Jacksonville, Fla.

**Drying Ovens.**

Oven Equipment & Mfg. Co., The, New Haven, Conn.

**Dumbwaiters. (Hand Power.)**

McKenna Bros. Brass Co., Pittsburgh, Pa.

Speidel, J. G., Reading, Pa.

**Dump Wagons and Wagon Boxes.**

Troy Wagon Works Co., Troy, O.

**Dust-Collecting Systems.**

Buffalo Forge Co., Buffalo, N. Y.

King Co., F. E., Norfolk, Va.

South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.

**Dynamite. (Industrial and Agricultural.)**

Atlas Powder Co., Wilmington, Del.

Jefferson Powder Co., Birmingham, Ala.

Keystone Nat'l Powder Co., Emporium, Pa.

**Dynamos and Motors.**

Assets Purchasing Co., Wheeling, W. Va.

Fort Wayne Electric Works, Fort Wayne, Ind.

General Electric Co., Schenectady, N. Y.

Terry Steam Turbine Co., Hartford, Conn.

Triumph Electric Co., Cincinnati, Ohio.

Western Electric Co., New York, N. Y.

**Eaves. (Trough.)**

Edwards Mfg. Co., Cincinnati, O.

Hussey & Co. C. G., Pittsburgh, Pa.

Milwaukee Corrugating Co., Milwaukee, Wis.

**Electors. (Sewage.)**

Lunkenheimer Co., The, Cincinnati, O.

Pacific Flush Tank Co., New York, N. Y.

**Electric Machinery. (Dynamoes, Generators, Motors, etc.)**

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.

American Machine Co., Louisville, Ky.

Crocker-Wheeler Co., Amper, N. J.

Engelberg Electric & Mechanical Works, St. Joseph, Mich.

Fairbanks-Morse & Co., Atlanta, Ga.

Fort Wayne Electric Works, Fort Wayne, Ind.

General Electric Co., Schenectady, N. Y.

Heer Engine Co., Portsmouth, O.

Lee Electric Co., Baltimore, Md.

Moore & Co., Edgar M., Pittsburgh, Pa.

Piedmont Electric Co., Asheville, N. C.

Robbins & Myers Co., Springfield, O.

Schneider Electric Co., Evansville, Ind.

Sturtevant Co., B. F., Hyde Park Boston, Mass.

Triumph Electric Co., Cincinnati, O.

Wilson Mch. Co., Harold R., St. Louis, Mo.

**Electrical Contractors, Instruments and Supplies.**

Carroll Electric Co., Washington, D. C.

Crocker-Wheeler Co., Amper, N. J.

Economy Fuse & Mfg. Co., Chicago, Ill.

Fort Wayne Electric Works, Fort Wayne, Ind.

General Electric Co., Schenectady, N. Y.

Hill & Co., Walter E., Baltimore, Md.

Johns-Manville Co., H. W., New York, N. Y.

Lee Electric Co., Baltimore, Md.

Levy-Morton Co., Columbus, Ga.

Piedmont Electric Co., Asheville, N. C.

Robbins & Myers Co., Springfield, O.

**Electric Light Plants. (Portable.)**

Schroeder Electric Co., Evansville, Ind.

**Electro-Magnet. [See Magnet Electro.]**

**Electric Vehicles.**

General Vehicle Co., Long Island City, N. Y.

**Elevating, Conveying and Power Transmission Machinery. [See also Conveying and Elevating Machinery and Power Transmission Mch.]**

**Elevators.**

American Electric Machine & Elevator Co., St. Louis, Mo.

American Machine Co., Louisville, Ky.

Atlas Machine Co., Louisville, Ky.

Curran Elevator Co., James H., Cincinnati, O.

Kansas City Elevator Mfg. Co., Kansas City, Mo.

Levy-Morton Co., Columbus, Ga.

Moffat Machinery Mfg. Co., Charlotte, N. C.

Ohio Elevator & Machine Co., Columbus, O.

Otis Elevator Co., New York, N. Y.

Ridgway & Son Co., The, Catesville, Pa.

Speidel, J. G., Reading, Pa.

Waraw Elevator Co., Baltimore, Md.

Westbrook Elevator Co., Danville, Va.

**Elevators. (Automatic.)**

Mathews Gravity Carrier Co., Ellwood City, Pa.

**Elevators. (Portable for Warehouses, etc.)**

Economy Elevator Co., Chicago, Ill.

**Elevator Bolts.**

Upon Nut Co., The, Cleveland, O.

**Elevator Buckets.**

Caldwell & Son Co., H. W., Chicago, Ill.

Hendrick Mfg. Co., Carbondale, Pa.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia) Pa.

**Elevator Enclosures and Cabs.**

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Cincinnati Mfg. Co., Cincinnati, O.

Dow Wire & Iron Works, Louisville, Ky.

Dufur & Co., Baltimore, Md.

Dufur, Baggett & Co., Baltimore, Md.

Meyers Mfg. Co., The Fred J., Hamilton, O.

Ohio Elevator & Machine Co., The, Columbus, O.

Otis Elevator Co., New York, N. Y.

**Elevator Rops. [See Wire Rope]**

**Elevator Safety Gates.**

American Elec. Mch. & Elevator Co., St. Louis, Mo.

Richmond Safety Gate Co., Richmond, Ind.

**Emery Wheels. [See Grinding Wheels.]**

**Employment Bureau.**

Diamond Labor Agency, Chicago, Ill.

**Engineers.**

**APPRAISAL.**

Day & Zimmerman, Philadelphia, Pa.

Ferree Co., The H. G., Memphis, Tenn.

Nacey, John Wharton, Houston, Tex.

**BLAST FURNACES.**

Smrythe Co., The S. R., Pittsburgh, Pa.

**CHEMICAL.**

Crosby, Walter W., Baltimore, Md.

Institute of Industrial Research, Washington, D. C.

Pittsburgh Testing Laboratory, Pittsburgh, Pa.

**CIVIL.**

Arnold Co., The, Chicago, Ill.

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Lide, Martin J., Birmingham, Ala.  
Steinmetz, C. M., Washington, D. C.  
Stevens, Harry, Washington, D. C.  
Tucker & Laxton, Charlotte, N. C.

## MINING.

Brown & Clarkson, Washington, D. C.  
Grimesley, G. P., Martinsburg, W. Va.  
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Anderson & Christie, Charlotte, N. C.  
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Crosby, Walter W., Baltimore, Md.  
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## PAVING AND ROAD.

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Firth, Joseph, Charlotte, N. C.  
Fuller-Coutt Co., St. Louis, Mo.  
Institute of Industrial Research, Washington, D. C.  
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Shand Engineering Co., Columbia, S. C.  
White, Gilbert C., Charlotte, N. C.

## PUBLIC SERVICE PROPERTIES.

Day & Zimmerman, Philadelphia, Pa.  
Ferree Co., The, H. G., Memphis, Tenn.  
Ford, Bacon & Davis, New York, N. Y.  
Glanville, Harry L., Boston, Mass.  
Graves Engineering Co., Inc., New York, N. Y.  
Maxey, John Wharton, Houston, Tex.  
Scotfield Engineering Co., Philadelphia, Pa.  
Stone & Webster Engr. Corp., Boston, Mass.  
White Companies, J. G., New York, N. Y.

**REINFORCED CONCRETE.** (Bridges, Buildings, etc.)  
Cauldwell-Wingate Co., Atlanta, Ga.  
Cumming, F. N. (Taylor), Claremont, Va.  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Guarantee Construction Co., New York, N. Y.  
Luten, Daniel B., Indianapolis, Ind.  
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Requarth Co., G. W., Charlotte, N. C.  
Savannah Eng. & Construction Co., Savannah, Ga.  
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## RIVER AND HARBOR.

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## SEWERAGE AND WATER-WORKS.

Anderson & Christie, Charlotte, N. C.  
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Dabney Engineering Co., Memphis, Tenn.  
Elrod, Henry E., Dallas, Texas.  
Ford, Bacon & Davis, New York, N. Y.  
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Quick, Alfred M., Baltimore, Md.  
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White Companies, J. G., New York, N. Y.  
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Wright Engineering Co., San Antonio, Tex.

**STEEL WORK AND ROLLING MILLS.**  
Smythe Co., The S. R., Pittsburgh, Pa.

**STRUCTURAL STEEL.**  
Foster-Creighton-Gould Co., Nashville, Tenn.  
Freeman, Jr., Arthur C., Norfolk, Va.  
Shearer, C. E., Memphis, Tenn.  
Solomon-Norcross Co., Atlanta, Ga.  
Spiker, William C., Atlanta, Ga.

**THEATRE CONSTRUCTION.**  
Gatlin, W. R., Hopkinsville, Ky.

## Engines.

**COMPRESSED AIR.**  
Dake Engine Co., Grand Haven, Mich.

## GAS AND GASOLINE.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.  
Cooper Co., C. & G., Mt. Vernon, Ohio.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Hoer Engine Co., Portsmouth, O.  
Mietz, A., New York, N. Y.  
Otto Gas Engine Works, Philadelphia, Pa.  
Southern Engine & Boiler Works, Jackson, Tenn.  
Struthers-Wells Co., Warren, Pa.  
Van Duzen, Royce Co., The, Columbus, O.  
Westinghouse Machine Co., The, Pittsburgh, Pa.

## OIL.

Fairbanks-Morse & Co., Atlanta, Ga.  
Heer Engine Co., Portsmouth, Ohio.  
Mietz, A., New York, N. Y.  
Snow Steam Pump Works, The, New York, N. Y.  
Wygodsky Engine Co., New York, N. Y.

## STEAM.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.  
American Hoist & Derrick Co., St. Paul, Minn.  
Ball Engine Co., Erie, Pa.  
Buffalo Forge Co., Buffalo, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cooper Co., C. & G., Mt. Vernon, Ohio.  
Dake Engine Co., Grand Haven, Mich.  
Engberg Electric & Mechanical Works, St. Joseph, Mo.

Erie City Iron Works, Erie, Pa.  
Gibbs Machinery Co., Inc., Columbus, S. C.  
Griffith & Wedge Co., The, Zanesville, O.  
Griscom-Russell Co., New York, N. Y.  
Harris Bros. Co., Chicago, Ill.  
Houston, Stanwood & Gamble, Co., Cincinnati, O.  
Löffel & Co., James, Springfield, O.  
Lombard Iron Works, Augusta, Ga.

Mecklenburg Iron Works, Charlotte, N. C.  
Murray Iron Works Co., Burlington, Pa.  
Phoenix Iron Works Co., Meadville, Pa.  
Schiffel Iron Works, Macon, Ga.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Viller Mfg. Co., Milwaukee, Wis.  
Westinghouse Machine Co., Pittsburgh, Pa.

## Envelopes.

Young & Selden Co., Baltimore, Md.

## Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.  
Bryers Mach. Co., The, John F., Ravenna, O.  
Fairbanks Steam Shovel Co., Marion, O.  
Gade Excavating Co., The, Iowa Falls, Iowa.  
Hayward Co., New York, N. Y.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Marion Steam Shovel Co., Marion, O.  
Monaghan Machine Co., Chicago, Ill.  
Morris Machine Works, Baldwinville, N. Y.  
National Hoisting Engine Co., Harrison, N. J.  
Norborn Engineering Co., Philadelphia, Pa.  
Williams Co., The G. H., Cleveland, O.

## Excavators. (Trench.)

Fairbanks Steam Shovel Co., Marion, O.  
Gade Excavating Co., The, Iowa Falls, Iowa.  
Hayward Co., The, New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.

## Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

## Exhaust Heads.

American Spiral Pipe Works, Chicago, Ill.

## Exhibits. (Machinery Builders' Equipment and Supplies.)

Builders' Exchange, Baltimore, Md.

## Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

## Expanded Metal. [See Lath.]

## Explosives.

Atlas Powder Co., Wilmington, Del.  
Jefferson Powder Co., Birmingham, Ala.  
Keystone Nat'l. Powder Co., Emporium, Pa.

## Export Trade Journal.

El Comercio, New York, N. Y.

## Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

## Fans. (Electric.)

General Electric Co., Schenectady, N. Y.  
Robbins & Myers Co., Springfield, O.

## Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

## Fastener Driving Machine. (Corrugated Joint.)

Saranac Machine Co., Benton Harbor, Mich.

## Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Erie City Iron Works, Erie, Pa.  
Griscom-Russell Co., New York, N. Y.  
Murray Iron Works Co., Burlington, Ia.  
National Pipe Bending Co., New Haven, Conn.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.  
Stewart Heater Co., Buffalo, N. Y.

## Feed-Water Heater and Purifier and Oil Separator Combined.

Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Stewart Heater Co., Buffalo, N. Y.

## Felt. (Building, Sheathing.)

Barrett Mfg. Co., Philadelphia, Pa.

## Fencing.

Gulf States Steel Co., Birmingham, Ala.

## Fencing, Entrance Gates. (Iron, Steel, Wire.)

Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
New Jersey Wire Cloth Co., Trenton, N. J.  
Ohio Elevator & Mach. Co., The, Columbus, O.

## Fertilizer Machy. [See also Phosphate Mchy.]

Stedman's Foundry & Machine Works, Aurora, Ind.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Fibre. (Vulcanized.)

Continental Fibre Co., Newark, Del.

## Files.

Barnett Co., G. & H., Philadelphia, Pa.  
Nicholson File Co., Providence, R. I.

## Filters. (Water, for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
Lynn-Superior Co., The, Cincinnati, O.  
New York Con. Jewell Fil. Co., New York, N. Y.

## Fire Clay. [See Brick, Fire.]

## Fire Door Fixtures.

Richmond Safety Gate Co., Richmond, Ind.  
Victor Mfg. Co., Newburyport, Mass.

## Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

## Fire Escapes.

Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.

## Fire Places. (Brick and Tile.)

Hood Brick Co., B. Millin, Atlanta, Ga.

## Fireproof Building Construction. [See Concrete Construction.]

## Fireproof Building Material.

Hannon Pipe Co., P., Louisville, Ky.  
John-Manville Co., H. W., New York, N. Y.

## Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.  
Richmond Safety Gate Co., Richmond, Ind.  
Victor Mfg. Co., Newburyport, Mass.

## Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

## Fittings. (Wire Rope.)

American Steel & Wire Co., Chicago, Ill.  
Waterbury Co., New York, N. Y.

## Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Millin, Atlanta, Ga.

## Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Baltimore, Md.

## Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Construction Co., Phila., Pa.  
American Spiral Pipe Works, Chicago, Ill.  
Dart Mfg. Co., E. M., Providence, R. I.  
Glanville Pipe & Foundry Co., Lynchburg, Va.  
National Tube Co., Pittsburgh, Pa.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Wood & Co., R. D., Philadelphia, Pa.

## Flare Lamps.

Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

## Flexible Joints.

Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

## Floor Surfacing Machine. (Auto-Ball Bearing Electric.)

Wayvill Chappell & Co., Chicago, Ill.

## Floor Tile.

Northcross Mantel Co., W. J., Memphis, Tenn.

## Flooring. (Crescoted Block.)

Republic Crescoting Co., Indianapolis, Ind.

## Flooring. (Hardwood, Maple, Oak.)

Nashville Hardwood Flooring Co., Nashville, Tenn.  
Whiting, William S., Asheville, N. C.

## Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.  
Nordyke & Marnon Co., Indianapolis, Ind.  
Salem Foundry & Machine Works, Salem, Va.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

## Flue Lining.

Southern Sewer Pipe Co., Birmingham, Ala.

## Forges.

Buffalo Forge Co., Buffalo, N. Y.

## Forgings.

Weimer Chain & Iron Co., Lebanon, Pa.

## Foundations. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

## Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.  
Paxson Co., J. W., Philadelphia, Pa.

## Foundry Facings. (Talc and Soapstones.)

Georgia Talc Co., Asheville, N. C.

## Foundry and Machine Shops.

Earle Gear & Machine Co., Philadelphia, Pa.  
Glanville Pipe & Foundry Co., Lynchburg, Va.  
Goldens Foundry & Machine Wks., Columbus, Ga.  
Grainger & Co., Louisville, Ky.  
Lombard Iron Works, Augusta, Ga.  
Poole Eng. & Mach. Co., Baltimore, Md.  
Titus, E. E., Petersburg, Va.  
Vaik & Murdoch Iron Works, Charleston, S. C.

## Frogs. [See Railroad Frogs and Switches.]

## Fuel Economizer.

Green Fuel Economizer Co., Mattawan, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

## Fuel Oil.

Gulf Refining Co., Pittsburgh, Pa.  
U. S. Asphalt Refining Co., New York, N. Y.

## Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

## Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

## Fuses, Bases and Fittings.

John-Manville Co., H. W., New York, N. Y.

## Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
McCalla, Inc., Harold, Philadelphia, Pa.  
Portsmouth Steel Co., Portsmouth, O.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

## Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

## Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

## Gas Engines. [See Engines, Gas.]

## Gas Machines.

Kemp Mfg. Co., O. M., Baltimore, Md.  
Milburn Co., Alex. N., Baltimore, Md.

## Gas Plants.

Power & Mining Machinery Co., Cudahy, Wis.  
Western Gas Construction Co., Ft. Wayne, Ind.

## Gas Producers.

Otto Gas Engine Works, Philadelphia, Pa.  
Smythe Co., The S. R., Pittsburgh, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.  
Wood & Co., R. D., Philadelphia, Pa.

## Gasoline and Kerosene.

Gulf Refining Co., Pittsburgh, Pa.

## Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

## Gears.

American Die & Tool Co., Reading, Pa.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Cresson-Morris Co., Philadelphia, Pa.  
Earle Gear & Machine Co., The, Philadelphia, Pa.  
James Mfg. Co., D. O., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Poole Engineering & Machine Co., Baltimore, Md.

## Generators. (Hot Water.)

Griscom-Russell Co., New York, N. Y.

## Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mo.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.  
Triumph Electric Co., Cincinnati, O.

## Geologists.

Davis, Geo. C., Phila., Pa.  
Froehling & Robertson, Richmond, Va.  
Grimesley, G. P., Martinsburg, W. Va.  
Maynard-Carter, Chattanooga, Tenn.

## Glass. (Plate, etc.)

Hinswanger & Co., Memphis, Tenn.

## Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

## Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., Nicetown (Philadelphia), Pa.

## Granite.

Byrd Bros., Salisbury, N. C.  
Southern Marble & Granite Co., Spartanburg, S. C.

## Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

## Grates and Grate Bars.

Huber Grate Bar & Stoking Co., Baltimore, Md.  
Thomas Grate Bar Co., Birmingham, Ala.

## Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.

## Gravel. (Roofing and Road)

American Ballast Co., Knoxville, Tenn.

## Gravity Spiral Chutes.

Mathews Gravity Carrier Co., Ellwood City, Pa.

## Grease.

Albany Lubricating Co., New York, N. Y.

## Grease Cups.

Albany Lubricating Co., New York, N. Y.  
Lunkenheimer Co., The, Cincinnati, O.

## Greases and Lubricating Compounds.

Albany Lubricating Co., New York, N. Y.  
Galena Signal Oil Co., Franklin, Pa.  
Robinson & Son Co., Wm. O., Baltimore, Md.

## Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

## Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.

## Groovers.

Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

## Gunpowder.

Atlas Powder Co., Wilmington, Del.  
Jefferson Powder Co., Birmingham, Ala.  
Keystone National Powder Co., Emporium, Pa.

## Hammers. (Steam, Power, Pneumatic.)

Independent Pneumatic Tool Co., Chicago, Ill.

## Handle Machinery. [See Woodworking Machinery.]

## Hangers. [See Pulleys, Shafting and Hangers.]

## Hay Tools.

Myers & Bro., F. E., Ashland, .

## Heater. (Asphalt.)

Cumner & Son Co., F. D., The, Cleveland, Ohio.

## Heating Apparatus, Engineers and Contractors.

American Blower Co., Detroit, Mich.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

## Hoisting Machinery.

American Hoist & Derrick Co., St. Paul, Minn.  
Bryers Machine Co., The, John F., Ravenna, Ohio.  
Flory Mfg. Co., Grand Haven, Mich.  
Flory Mfg. Co., S., Bangor, Pa.  
Link-Belt Co., Nicetown (Philadelphia), Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Monaghan Machine Co., Chicago, Ill.  
Stroudsburg Engine Works, Stroudsburg, Pa.

## Hoists.

CHAIN.  
Spindel, J. G., Reading, Pa.

## ELECTRIC.

American Hoist & Derrick Co., St. Paul, Minn.  
Lidgerwood Mfg. Co., New York, N. Y.  
Monaghan Mch. Co., Chicago, Ill.  
National Hoisting Engine Co., Harrison, N. J.  
Ohio Elevator Co., New



**Industrial Track Work.** [See Railways, Ind.]**Injectors.**

Jenkins Bros., New York, N. Y.  
Lankenheimer Co., The, Cincinnati, O.  
Sellers & Co., Inc., Wm., Philadelphia, Pa.

**Insulated Wires and Cables.**

American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.

**Insulating Materials.**

Continental Fibre Co., Newark, Del.  
General Electric Co., Schenectady, N. Y.  
Johns-Manville Co., H. W., New York, N. Y.  
Standard Paint Co., New York, N. Y.

**Insulating (Tape).**

Standard Paint Co., New York, N. Y.

**Insulating. (Varnishes and Compounds.)**

Standard Paint Co., New York, N. Y.

**Iron.**

La Belle Iron Works, Steubenville, O.  
Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.  
Union Drawn Steel Co., Beaver Falls, Pa.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.

**Irrigation Machinery.**

Oameron Steam Pump Wks., A. S. New York, N. Y.

**Investment Securities.**

Provident Savings Bank & Trust Co., Cincinnati, Ohio.

**Jobbers. (Electrical.)**

Carroll Electrical Co., Washington, D. C.

**Jump Dealers.**

Kander & Co., H., Bowling Green, Ohio.

**Kettles. (Steam Jacket.)**

Badger & Sons Co., E. B., Boston, Mass.

**Key Seater. (Portable.)**

Burr & Son, John T., Brooklyn, N. Y.

**Knitting Machinery.**

Acme Knitting Mch. & Needle Co., Franklin, N. H.

**Labor Agency.**

Diamond Labor Agency, Chicago, Ill.

**Lace Leather.**

Gorton & Knight Mfg. Co., Worcester, Mass.

**Lamps. (Arc and Incandescent.)**

Boston Economy Lamp Division, Danvers, Mass.  
General Electric Co., Schenectady, N. Y.  
Lee Electric Co., Baltimore, Md.  
Piedmont Electric Co., Asheville, N. C.  
Westinghouse Lamp Co., New York, N. Y.

**Lamps. (Carbon and Tungsten.)**

Newman Electric Lamp Co., Cincinnati, O.

**Lamp Posts. (Electric, Gas.)**

Union Foundry Co., Anniston, Ala.  
Western Gas Construction Co., Ft. Wayne, Ind.

**Lamp Standards. (Ornamental Iron.)**

Union Foundry Co., Anniston, Ala.

**Lands. (Mineral, Timber, Farm, etc.)** [See Industrial, Agricultural and Commercial Opportunities.]**Landscape Architects (See Engineers.)** [Landscape]**Lath. (Expanded Metal.)**

Aronson Co., L. Columbia, S. C.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.  
Trussed Concrete Steel Co., Youngstown, O.

**Lathes. (Engine.)**

Greaves, Kinsman Tool Co., The, Cincinnati, O.

**Latin American Trade.**

El Comercio, New York, N. Y.

**Lawn Furniture. (Wire.)**

Bolles Iron & Wire Works, J. E., Detroit, Mich.  
Dufur & Co., Baltimore, Md.  
Dufur, Baggott & Co., Baltimore, Md.

**Leadite.**

Leadite Co., Inc., The, Philadelphia, Pa.

**Light Plants.**

Carlisle & Finch Co., The, Cincinnati, Ohio.

**Lights. (Portable Acetylene.)**

Milburn Co., Alex. N., Baltimore, Md.

**Lime. (Hydrated.)**

Security Cement & Lime Co., Hagerstown, Md.

**Limestone Products.**

Security Cement & Lime Co., Hagerstown, Md.

**Liquor Filters.**

International Filter Co., Chicago, Ill.

**Lithographers, Engravers.**

Young & Seiden Co., Baltimore, Md.

**Lockers. (Metal.)**

Bernstein Mfg. Co., Phila., Pa.  
Kelley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

**Lockers (Steel)**

Merritt & Co., Camden, N. J.

**Locomotives.**

Baldwin Locomotive Wks., The, Philadelphia, Pa.  
Climax Mfg. Co., Corry, Pa.  
Card, Geo. B., Cincinnati, O.  
Davenport Locomotive Works, Davenport, Ia.  
Jeffrey Mfg. Co., Columbus, O.  
Lima Locomotive Corporation, Lima, O.  
Porter Co., H. K., Pittsburgh, Pa.  
Southern Iron & Equipment Co., Atlanta, Ga.

**Log Dumping Device.**

Chase Turbine Mfg. Co., Orange, Mass.

**Looms and Weaving Machinery.**

Draper Co., Hopedale, Mass.

**Mason Machine Works, Taunton, Mass.**

Saco-Lowell Shops, Boston, Mass.

**Loom Harness.**

American Supply Co., Providence, R. I.

**Lubricants.**

Albany Lubricating Co., New York, N. Y.

**Lubricants. (Graphite.)**

Dixon Crucible Co., Joseph, Jersey City, N. J.

**Lumber.**

Industrial Lumber Co., Elizabeth, La.

**Lumber. (Crescote.)**

American Crescote Works, New Orleans, La.

**Lumber. (Heavy Construction, Pitch Pine, etc.)**

Industrial Lumber Co., Elizabeth, La.

**National Lumber & Crescote Co., Texarkana, Ark.****Lumber Buggies.**

Soule Steam Feed Works - Meridian, Miss.

**Lumber Stackers.**

Soule Steam Feed Works, Meridian, Miss.

**Machinery. (Special.)**

Riles Co., E. W., Brooklyn, N. Y.  
Kline, Lewis T., Alpena, Mich.  
Universal Machine Co., Baltimore, Md.

**Machinery and Supplies. (New and Second-Hand Bargains.)**

Assets Purchasing Co., Wheeling, W. Va.  
Boston Iron & Metal Co., Balto., Md.  
Casey Machinery Co., D. L., Springfield, O.  
Cleveland Belting & Machinery Co., Cleveland, O.  
Consolidated Iron & Metal Co., Chattanooga, Tenn.  
Contractors' Service Co., New York, N. Y.  
Duzels & Son, New York, N. Y.  
Harris Bros. Co., Chicago, Ill.  
Hittner's Sons Co., Henry A., Philadelphia, Pa.  
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.  
Lehman, Charles T., Birmingham, Ala.  
Lodge & Shipley Mach. Tool Co., Cincinnati, O.  
Marine Metal & Supply Co., New York, N. Y.  
Moore & Co., Edgar M., Pittsburgh, Pa.  
New River Co., Macdonald, W. Va.  
Nussbaum & Co., V. M., Fort Jayne, Ind.  
Pannmuller Engineering Co., Chicago, Ill.  
Pine & Contractors' Supply Co., New York, N. Y.  
Power Equipment Co., New York, N. Y.  
Prentiss Tool & Supply Co., New York, N. Y.  
Randle Machinery Co., Cincinnati, O.  
Read Co., Howard W., Philadelphia, Pa.  
Sachsenmayer & Co., George, Philadelphia, Pa.  
Samuel, Frank, Philadelphia, Pa.  
Seferly's Sons, Inc., L. F., Philadelphia, Pa.  
South Side Fdry. & Mch. Co., Charleston, W. Va.  
Tampa Machinery Exchange, Tampa, Fla.  
Thomsonville Iron Works, Thomsonville, Ga.  
Toomer, Frank, Inc., Philadelphia, Pa.  
Wilson Machy. Co., Harold R., St. Louis, Mo.  
Winterer Co., Herman L., Philadelphia, Pa.

**Machine Tools.**

Greaves, Kinsman Tool Co., The, Cincinnati, O.

**Machinists. (Engineers.)**

Savannah Iron Works, Savannah, Ga.

**Magnesite Materials.**

Johns-Manville Co., H. W., New York, N. Y.

**Magnetic Separators.**

Luchman & Co., Inc. C. G., New York, N. Y.

**Mail Chutes.**

Cutler Mail Chute Co., Rochester, N. Y.

**Mantels. (Tile.)**

Northcross Mantel Co., W. J., Memphis, Tenn.

**Mantels. (Wooden.)**

Northcross Mantel Co., W. J., Memphis, Tenn.

**Mechanical Draft.**

Buffalo Forge Co., Buffalo, N. Y.

**Metal Ceilings. [See Ceilings, Metal.]****Metaline.**

Metaline Co., Long Island City, N. Y.

**Metal. (For Tanks, Culverts, Roofing, etc.)**

Portsmouth Steel Co., Portsmouth, O.

**Metal Corner Bead.**

Penn Metal Co., Boston, Mass.

**Metal Culverts. [See Culverts.]** (Corrugated Metal.)**Metal Shingles. [See Shingles.]** (Metal.)**Metal Stamping.**

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

**Metal Window Frames and Sash. [See Window Frames and Sash.]** (Fireproof.)**Metal Work. [See Sheet Metal Work.]****Metal-Working Machinery. (Sheet)**

Bliss Co., E. W., Brooklyn, N. Y.

**Meters. (Water.)**

Alberger Pump & Condenser Co., New York, N. Y.

**Meter Boxes, Couplings, Gauges. (Water.)**

Clark Co., H. W., Mattson, Ill.

**Micrometers, Calipers, etc.**

Starrett Co., L. S., Athol, Mass.

**Milk Filters. (Liquor, Milk, etc.)**

International Filter Co., Chicago, Ill.

**Mill Engineers and Architects.**

O'Brian, W. C., Memphis, Tenn.

**Mill Supplies.**

Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Gainesville Iron Works, Gainesville, Ga.  
Lombard Iron Works, Augusta, Ga.  
Lunkenheimer Co., The, Cincinnati, O.  
Mecklenburg Iron Works, Charlotte, N. C.  
Nordyke & Marmon Co., Indianapolis, Ind.  
Salem Foundry & Machine Wks., Salem, Va.  
Starr Co., B. F., Baltimore, Md.  
Wolf Co., Chambersburg, Pa.

**Mining Machinery. (Gold, Copper, Plate, etc.)**

Bartlett & Snow Co., C. O., Cleveland, O.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Mecklenburg Iron Works, Charlotte, N. C.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.

**Mixers. (Concrete.)**

Atlas Engineering Co., Milwaukee, Wis.  
Austin Machinery Co., W. E., Atlanta, Ga.  
Blystone Mfg. Co., Cambridge Springs, Pa.  
Standard Scale & Supply Co., Pittsburgh, Pa.  
Van Duzens, Roys Co., The, Columbus, O.

**Mixing Machinery.**

Dunning, W. D., Syracuse, N. Y.

**Mortar Colors.**

Chattanooga Paint Co., Chattanooga, Tenn.

**Motor Trucks. (Electric.)**

General Vehicle Co., Long Island City, N. Y.

**Motor Trucks. (Gasoline.)**

White Co., The, Cleveland, O.

**Motor Trucks. (Second Hand.)**

Mar-Del Mobile Co., Baltimore, Md.

**Music Wire.**

Waterbury Co., The, New York, N. Y.

**Nails. (Cut.)**

La Belle Iron Works, Steubenville, O.

**Nails and Spikes.**

La Belle Iron Works, Steubenville, Ohio.  
Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Nuts. [See Bolts, Nuts, Rivets, etc.]****Office Furniture (Steel)**

Merritt & Co., Camden, N. J.

**Oil. (Crescote.)**

Barrett Mfg. Co., Philadelphia, Pa.

**Oil. (Lubricating, Etc.)**

Albany Lubricating Co., New York, N. Y.

**Oil Cans.**

Galena Signal Oil Co., Franklin, Pa.

**Oil Engines. [See Engines (Oil).]****Oil Separators.**

Stewart Hester Co., Buffalo, N. Y.

**Oil Well Machinery.**

Keystone Steam Well Mach. Co., Beaver Falls, Pa.

**Oil Well Tubing and Casing.**

Byers Co., A. M., Pittsburgh, Pa.

**Ore Handling Machinery. [See Coal Handling Machinery.]****Ornamental Iron Works.**

Bolles Iron & Wire Wks., J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Ohio Elevator & Mach. Co., The, Columbus, O.  
Schrieber & Sons Co., The, Cincinnati, O.  
Snead Architectural Iron Works, Louisville, Ky.

**Ovens. (Baking, Enameling, Japanning.)**

Oven Equipment & Mfg. Co., The, New Haven, Conn.

**Oxygen.**

International Oxygen Co., New York, N. Y.

**Oxygen Generators.**

International Oxygen Co., New York, N. Y.

**Oxy-Acetylene Welding and Cutting Outfit and Supplies.**

International Oxygen Co., New York, N. Y.

**Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**

Goodyear Tire & Rubber Co., Akron, Ohio.

**Packing. (Lead Wool.)**

United Lead Co., New York, N. Y.

**Paint. (Cement Floors, Masonry, Stucco, etc.)**

Cheesman & Elliott, New York, N. Y.

**Paint. (Metal Surfaces.)**

Cheesman & Elliott, New York, N. Y.

**Paint. (Roofing, Building, etc.)**

Cameron & Barkley Co., Charleston, S. C.

**Paint-Making Machinery.**

Lynn-Superior Co., The, Cincinnati, O.

**Paper. (Roofing, Building, Sheeting, etc.)**

Barrett Mfg. Co., Philadelphia, Pa.

**Patents and Inventions.**

Russell Machine Co., F. K., Dallas, Tex.

**Patent Attorneys.**

Brown, Eugene C., Washington, D. C.  
Chandless & Chandless, Washington, D. C.  
Coleman, Watson E., Washington, D. C.  
Duffie & Co., John S., Washington, D. C.  
Evans & Co., Victor J., Washington, D. C.  
Fitzgerald & Co., W. T., Washington, D. C.  
Hill, H. S., Washington, D. C.  
Hodges, Vernon E., Washington, D. C.  
Jenner, Herbert, Washington, D. C.  
Lacey, R. S. & A. H., Washington, D. C.

**Paving Filler.**

Barrett Mfg. Co., Philadelphia, Pa.

**Paving Contractors.**

Dolanway Paving Co., New York, N. Y.

**Paving Blocks. (Crescote.)**

International Crescoting & Construction Co., Galveston, Tex.

**Paving Blocks. (Granite.)**

Byrd Bros., Salisbury, N. C.

**Paving Brick.**

Carlyle Paving Brick Co., Portsmouth, O.

**Paving Systems. (Concrete.)**

Dolanway Paving Co., New York, N. Y.

**Perforated Metal.**

Caldwell & Son, H. W., Chicago, Ill.

**Petroleum Refiners.**

Gulf Refining Co., The, New York, N. Y.

**Phosphate Machinery.**

Alsting Engineering Co., J. R., New York, N. Y.

**Pile Drivers.**

Valcan Iron Works, Chicago, Ill.

**Piling. (Crescote.)**

American Crescote Works, New Orleans, La.

**Pillows.**

Golden's Foundry & Machine Co., Columbus, Ga.

**Pipe. (Cast Iron.)**

American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Construction Co., Phila., Pa.  
Clow & Sons, James B., Chicago, Ill.  
Donaldson Iron Co., Emaus, Pa.  
Ginsorgan Pipe & Foundry Co., Lynchburg, Va.  
Greenspan's Sons Iron & Steel Co., Jos., St. Louis, Mo.  
Lynchburg Foundry Co., Lynchburg, Va.  
Massillon Iron & Steel Co., Massillon, O.  
Standard Cast Iron Pipe & Fdry. Co., Bristol, Pa.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Warren Fdry. & Mach. Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.

**Pipe. (Coll.)**

Columbus Iron Works, Columbus, Ga.

**Pipe. (Corrugated Culvert.)** [See Culvert (Corrugated Metal).]**Pipe. (Lead)**

United Lead Co., New York, N. Y.

**Pipe. (Riveted.)**

Keeler Co., E., Williamsport, Pa.

**Pipe. (Second Hand.)**

- Pulleys. (Friction Clutch.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Cresson-Morris Co., Philadelphia, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Moore & White Co., The, Philadelphia, Pa.  
Poole Engineering & Mach. Co., Baltimore, Md.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulleys. (Steel Rim.)**  
Medart Patent Pulley Co., St. Louis, Mo.
- Pulleys. (Wood Split.)**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Lane Mfg. Co., Montpelier, Vt.  
Medart Patent Pulley Co., St. Louis, Mo.  
Reeves Pulley Co., Columbus, Ind.  
Saginaw Mfg. Co., Saginaw, Mich.  
Salem Foundry & Machine Wks., Salem, Va.
- Pulleys, Shafting and Hangers.**  
Caldwell & Son Co., H. W., Chicago, Ill.  
Cresson-Morris Co., Philadelphia, Pa.  
Dodge Manufacturing Co., Mishawaka, Ind.  
Golden's Foundry & Mach. Co., Columbus, Ga.  
Jeffrey Mfg. Co., Columbus, O.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Co., Nictown (Philadelphia), Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Nordyke & Marvin Co., Indianapolis, Ind.  
Poole Engineering & Mach. Co., Baltimore, Md.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Pulverizers.**  
Alsing Engineering Co., J. R., New York, N. Y.  
Austin Mfg. Co., Chicago, Ill.  
Gravander Pat. Crusher & Pulv. Co., St. Louis, Missouri.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Raymond Bros., Impact Pulv. Co., Chicago, Ill.  
Stedman's Foundry & Machine Wks., Aurora, Ind.  
Western Wheel Scraper Co., Aurora, Ill.
- Pumping Machinery.**  
Alberger Pump & Condenser Co., New York, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Erie Pump & Engine Works, Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Morris Machine Works, Baldwinville, N. Y.  
Myers & Bros., F. E., Ashland, O.  
Norborn Engineering Co., Philadelphia, Pa.  
Sydnor Pump & Well Co., Inc., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Air.)**  
Blakeslee Mfg. Co., Du Quoin, Ill.
- Pumps. (Boiler Feed.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Jeansville Iron Works Co., Hazleton, Pa.  
Moffatt Machinery Mfg. Co., Charlotte, N. C.  
Murray Iron Works Co., Burlington, Ia.  
Myers & Bros., F. E., Ashland, O.  
Union Steam Pump Co., Battle Creek, Mich.
- Pumps. (Centrifugal.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
De Laval Steam Turbine Co., Trenton, N. J.  
Erie Pump & Engine Works, Erie, Pa.  
Jeansville Iron Works Co., Hazleton, Pa.  
Morris Machine Works, Baldwinville, N. Y.  
Norborn Engineering Co., Philadelphia, Pa.  
Pacific Flush Tank Co., New York, N. Y.  
Wood & Co., R. D., Philadelphia, Pa.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Deep Well.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Layne & Bowler Co., Houston, Tex.
- Pumps. (Dredging.)**  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Erie Pump & Engine Works, Erie, Pa.  
Goulds Mfg. Co., Seneca Falls, N. Y.  
Morris Machine Works, Baldwinville, N. Y.  
Norborn Engineering Co., Philadelphia, Pa.  
Wood & Co., R. D., Philadelphia, Pa.
- Pumps. (Hydraulic.)**  
Buffalo Steam Pump Co., Buffalo, N. Y.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Caldwell Machine Co., Richmond, Va.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Erie Pump & Engine Works, Erie, Pa.  
French Mill Mch. Co., The, Fiqua, O.
- Pumps. (Oil and Gasoline.)**  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
- Pumps. (Steam.)**  
Alberger Pump & Condenser Co., New York, N. Y.  
Blake & Knowles Steam Pump Works, East Cambridge, Mass.  
Blakeslee Mfg. Co., Du Quoin, Ill.  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Clayton Air Compressor Works, Cambridge, Mass.  
Cook Well Co., The, St. Louis, Mo.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Deane Steam Pump Co., Holyoke, Mass.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Murray Iron Works Co., Burlington, Ia.  
Snow Steam Pump Works, The, New York, N. Y.  
Sydnor Pump & Well Co., Inc., Richmond, Va.  
Union Steam Pump Co., Battle Creek, Mich.  
Worthington, Henry R., Harrison, N. J.
- Pumps. (Turbine Driven.)**  
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Pumps. (Vacuum.)**  
Cameron Steam Pump Wks., A. S., New York, N. Y.  
Dean Bros. Steam Pump Wks., Indianapolis, Ind.  
Union Steam Pump Co., Battle Creek, Mich.
- Pumps. (Water-works.)**  
Goulds Mfg. Co., Seneca Falls, N. Y.
- Pump Leathers.**  
Graton & Knight Mfg. Co., Worcester, Mass.
- Punches and Dies.**  
American Die & Tool Co., Reading, Pa.
- Punching and Shearing Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Racks. (For Pattern Storage.)**  
Merritt & Co., Camden, N. J.
- Railroads. [See Industrial, Agricultural and Commercial Opportunities.]**
- Railroad Equipment and Supplies. (New and Second-hand.)**  
American Frog & Switch Co., Hamilton, O.  
Bailey-Lebby Co., The, Charleston, S. C.  
Birmingham Rail & Loco. Co., Birmingham, Ala.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Curd, Geo. B., Cincinnati, O.  
Fairbanks-Morse & Co., Atlanta, Ga.  
Foster Co., L. F., Pittsburgh, Pa.  
Georgia Car & Locomotive Co., Atlanta, Ga.
- Green Equipment Co., L. A., Pittsburgh, Pa.**  
Grimehaw, Wm. B., Philadelphia, Pa.  
Hirsch Rolling Mill Co., St. Louis, Mo.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Hyde, Chas., Pittsburgh, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Macleary, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Read Co., Howard W., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
United States Rail Co., Cumberland, Md.  
Weir Frog Co., Cincinnati, O.  
Wilson & Co., E. H., Philadelphia, Pa.  
Wilson Mach. Co., Harold R., St. Louis, Mo.  
Zelicker Supply Co., Walter A., St. Louis, Mo.
- Railroad Frogs and Switches.**  
American Frog & Switch Co., Hamilton, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Conley Frog & Switch Co., Memphis, Tenn.  
Easton Car & Construction Co., Easton, Pa.  
Kilby Frog & Switch Co., Birmingham, Ala.  
Newhall Engineering Co., Geo. M., Philadelphia, Pa.  
Robinson & Orr, Pittsburgh, Pa.  
Sweet's Steel Co., Williamsport, Pa.  
Weir Frog Co., Cincinnati, O.
- Rails. (Steel.)**  
Carnegie Steel Co., Pittsburgh, Pa.  
Continental Iron & Steel Co., New York, N. Y.  
Foster Co., L. F., Pittsburgh, Pa.  
Franklin, J. E., Atlanta, Ga.  
Green Equipment Co., L. A., Pittsburgh, Pa.  
Hirsch Rolling Mill Co., St. Louis, Mo.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Hyde, Chas., Pittsburgh, Pa.  
Hyde, Chas., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Levis & Co., Henry, Philadelphia, Pa.  
Macleary, J. H., Suffolk, Va.  
National Steel Rail Co., St. Louis, Mo.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Robinson & Orr, Pittsburgh, Pa.  
Sherwood, E. C., New York, N. Y.  
Southern Iron & Equipment Co., Atlanta, Ga.  
Steel Rail Supply Co., The, New York, N. Y.  
Sweet's Steel Co., Williamsport, Pa.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.  
United States Rail Co., Cumberland, Md.  
Wilson & Co., E. H., Philadelphia, Pa.
- Rail Bonds.**  
American Steel & Wire Co., Chicago, Ill.
- Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]**
- Railings and Grilles. (Brass.)**  
Newman Mfg. Co., Cincinnati, O.
- Railways. (Industrial.)**  
Chase Fdry. & Mfg. Co., Columbus, O.  
Cincinnati Frog & Switch Co., Cincinnati, O.  
Easton Car & Construction Co., Easton, Pa.  
Hunt Co., Inc., C. W., West New Brighton, N. Y.  
Link-Belt Co., Nictown (Philadelphia), Pa.
- Rams. (Hydraulic.) [See Hydraulic Rams.]**
- Reamers.**  
American Die & Tool Co., Reading, Pa.  
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Reeds.**  
American Supply Co., Providence, R. I.
- Refrigerating Machinery and Apparatus.**  
Husterman & Cramer Co., The, Detroit, Mich.  
Huntington Machine Co., Wilmington, Del.  
Viller Mfg. Co., Milwaukee, W. Va.  
Vogt Machine Co., Henry, Louisville, Ky.  
York Mfg. Co., York, Pa.
- Reinforcing Bars. [See Concrete Reinforcing Bars.]**
- Riveters. (Pneumatic.)**  
Independent Pneumatic Tool Co., Chicago, Ill.
- Road Machinery.**  
Austin Bros., Atlanta, Ga.  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Contractors Mch. & Supply Co., Pittsburgh, Pa.  
Erie Machine Shops, Erie, Pa.  
Gallion Iron Works & Mfg. Co., The, Gallion, Ohio.  
Huber Mfg. Co., The, Marion, Ohio.  
Kelly Springfield Road Roller Co., Springfield, O.  
Syracuse Chilled Plow Co., Syracuse, N. Y.  
Universal Road Mch. Co., Kingston, N. Y.  
Western Wheel Scraper Co., Aurora, Ill.  
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Roadmaking Materials.**  
Austin Bros., Atlanta, Ga.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Binders.**  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Roller. (Steam.)**  
Austin-Western Road Mch. Co., The, Chicago, Ill.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Contractors Mch. & Supply Co., Pittsburgh, Pa.  
Erie Machine Shops, Erie, Pa.  
Huber Mfg. Co., The, Marion, Ohio.  
Kelly Springfield Road Roller Co., Springfield, O.  
Universal Road Mch. Co., Kingston, N. Y.
- Road Oil.**  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Preservatives.**  
Barrett Mfg. Co., Philadelphia, Pa.  
Finley, Sam. E., Atlanta, Ga.  
Gulf Refining Co., Pittsburgh, Pa.  
Standard Oil Co., Inc., Newark, N. J.  
U. S. Asphalt Refining Co., New York, N. Y.
- Road Scarifiers.**  
Buffalo Steam Roller Co., Buffalo, N. Y.  
Gallion Iron Works & Mfg. Co., The, Gallion, Ohio.  
Huber Mfg. Co., The, Marion, Ohio.
- Rock Crushers. [See Crushers, Rock.]**
- Roller Covering Supplies.**  
American Supply Co., Providence, R. I.
- Roofing Caps.**  
Robertson Steel & Iron Co., W. F., Cincinnati, O.
- Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Beaver Falls, Pa.  
Asphalt Ready Rolling Co., New York, N. Y.  
Barber Asphalt Paving Co., Philadelphia, Pa.  
Barrett Mfg. Co., Philadelphia, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.  
Johns-Manville Co., H. W., New York, N. Y.  
Standard Paint Co., The, New York, N. Y.
- Roofing. (Metal Shingles.) [See Shingles, Metal.]**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.
- Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.**  
Milwaukee Corrugating Co., Milwaukee, Wis.
- Roofing. (Slate.)**  
East Bangor Consl. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.
- Roofing and Siding. (Metal.)**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Asbestos Protected Metal Co., Beaver Falls, Pa.  
Cameron & Barkley Co., Charleston, S. C.  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., The, Cincinnati, O.  
Hydram Roofing Co., Cincinnati, O.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Milwaukee Corrugating Co., Milwaukee, Wis.  
Moeschl-Edwards Corrugating Co., Covington, Ky.  
New Orleans Roofing & Metal Wks., New Orleans, La.  
Portsmouth Steel Co., Portsmouth, O.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Rope. (Manila, Sisal, Hemp, etc.)**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rope. (Wire.)**  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Hunt Co., Inc., C. W., West New Brighton, N. Y.  
Waterbury Co., New York, N. Y.
- Rope Drives.**  
Caldwell & Son, H. W., Chicago, Ill.  
Cresson-Morris Co., Philadelphia, Pa.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Waterbury Co., New York, N. Y.  
Wood's Sons Co., T. B., Chambersburg, Pa.
- Rubber Goods.**  
Electric Hose & Rubber Co., Wilmington, Del.  
Eureka Fire Hose Mfg. Co., New York, N. Y.  
Goodyear Tire & Rubber Co., Akron, Ohio.
- Rules. (Steel.)**  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.
- Safes and Vaults.**  
York Safe & Lock Co., York, Pa.
- Sand.**  
Arundel Sand & Gravel Co., Baltimore, Md.  
Halfour Quarry Co., Asheville, N. C.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
- Sand. (Foundry.)**  
Newport Sand Bank Co., Inc., Newport, Ky.
- Sap Stain Preventive.**  
Church & Dwight Co., New York, N. Y.
- Sash Chain.**  
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Saws.**  
Gerlach Co., Peter, Cleveland, O.  
Hoyt Bros. Saw Mfg. Co., Inc., Rochester, N. Y.  
Knickerbocker Co., H. B., Smithville, N. J.  
Sydnor Pump & Well Co., Inc., Richmond, Va.
- Saws. (Band.)**  
Smith Machine Co., H. B., Smithville, N. J.
- Saws. (Hack.)**  
Starrett Co., L. S., Athol, Mass.
- Sawmill Dogs.**  
Soule Steam Feed Works, Meridian, Miss.
- Sawmills.**  
Gainesville Iron Works, Gainesville, Ga.  
Gibbs Machinery Co., Inc., Columbia, S. C.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.
- Sawmill Machinery.**  
Bailey-Lebby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
Chase Turbine Mfg. Co., Orange, Mass.  
Knight Mfg. Co., Canton, O.  
Lane Mfg. Co., Montpelier, Vt.  
McKlenburg Iron Works, Charlotte, N. C.  
Schofield Iron Works, Macon, Ga.  
Southern Engine & Boiler Wks., Jackson, Tenn.  
Sydnor Pump & Well Co., Inc., Richmond, Va.
- Saw Sharpeners.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Saw Sharpeners and Files. (Cotton Gin.)**  
Carver Cotton Gin Co., East Bridgewater, Mass.
- Sawing Outfits. (Contractors and Industrial.)**  
Rotund Foundry & Machinery Co., Bennington, Vt.
- Scales.**  
Standard Scale & Supply Co., Pittsburgh, Pa.
- Scales. (Weighing and Counting.)**  
National Scale Co., Chicopee Falls, Mass.
- Scrap Iron & Steel.**  
Kander & Co., H., Bowling Green, Ohio
- Screens. (Fly, Window and Door.)**  
Cincinnati Mfg. Co., Cincinnati, O.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screens. (Mining, Stone, etc.)**  
Converse Co., Inc., F. S., Lestershire, N. Y.  
Erdie Perforating Co., Rochester, N. Y.  
Hendrick Mfg. Co., Carbondale, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.  
Mundt & Sons, Chester, Jersey City, N. J.  
New Jersey Wire Cloth Co., Trenton, N. J.
- Screenings. (For Concrete and Road Construction.)**  
American Ballast Co., Knoxville, Tenn.
- Screws. (Machine.)**  
Progressive Mfg. Co., Torrington, Conn.
- Screws. (Safety Set.)**  
Allen Manufacturing Co., Inc., Hartford, Conn.
- Searchlights.**  
Carlisle & Finch Co., The, Cincinnati, Ohio.  
Ft. Wayne Electric Works, Ft. Wayne, Ind.
- Separators. (Dust.)**  
Buffalo Forge Co., Buffalo, N. Y.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Separators. (Steam.)**  
Griscom-Russell Co., New York, N. Y.
- Sewer Flushing Siphons.**  
Merritt Hydraulics Co., Philadelphia, Pa.  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Joint Compounds.**  
Pacific Flush Tank Co., New York, N. Y.
- Sewer Pipe. (Vitrified.)**  
Bannon Pipe Co., P. Louisville, Ky.  
Blackmer & Post Pipe Co., St. Louis, Mo.  
Cannellton Sewer Pipe Co., Cannellton, Ind.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Sewer Pipe Co., Birmingham, Ala.  
Stevens Sons Co., H., Macon, Ga.
- Sewer Pipe and Drains. (Monolithic Concrete)**  
Requarth Co., C. W., Charlotte, N. C.
- Sewage Pumping and Disposal Apparatus.**  
Merritt Hydraulics Co., Philadelphia, Pa.  
Pacific Flush Tank Co., New York, N. Y.
- Shafts. (Automobile)**  
American Die & Tool Co., Reading, Pa.
- Shafting. (Cold Rolled Steel.)**  
American Steel & Wire Co., Chicago, Ill.
- Shafting. (Polished Steel.)**  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Medart Patent Pulley Co., St. Louis, Mo.  
Republic Iron & Steel Co., Youngstown, O.  
Union Drawn Steel Co., Beaver Falls, Pa.
- Shafting. [See Pulleys, Shafting and Hangers.]**
- Sharpening Stones.**  
Carborundum Co., Niagara Falls, N. Y.  
Vitrified Wheel Co., Westfield, Mass.
- Sheet, Brass and Copper.**  
Hussey & Co., C. G., Pittsburgh, Pa.  
McKenna Bros. Brass Co., Pittsburgh, Pa.
- Sheet Metal Work.**  
Atlas Metal Works, Dallas, Tex.  
Birmingham Metal Products Co., Birmingham, Ala.  
Danzon Metal Works, Hagerstown, Md.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Lone Star Culvert Co., Houston, Tex.  
McMillan Bros., Jacksonville, Fla.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
- Milwaukee Corrugating Co., Milwaukee, Wis.**  
Moeschl-Edwards Corrugating Co., Covington, Ky.  
Salsbury Metal Culvert Co., Salsbury, N. C.  
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Virginia Metal & Culvert Co., Roanoke, Va.  
Volgtman & Co., Chicago, Ill.
- Sheet Metal Working Machinery.**  
Bliss Co., E. W., Brooklyn, N. Y.
- Sheet Steel and Iron.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
La Helle Iron Works, Steubenville, O.  
Portsmouth Steel Co., Portsmouth, O.  
Republic Iron & Steel Co., Youngstown, O.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.
- Shelving. [Steel Vault, Store, Etc.]**  
Merritt & Co., Camden, N. J.
- Shingles. (Metal.)**  
Cortright Metal Roofing Co., Philadelphia, Pa.  
Edwards Mfg. Co., Cincinnati, O.  
Hydram Roofing Co., Cincinnati, O.  
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.  
Moeschl-Edwards Corrugating Co., Covington, Ky.  
Southern Sheet & Tin Plate Co., Ashland, Ky.
- Shop Furniture. (Steel)**  
Merritt & Co., Camden, N. J.
- Shovels. (Special for Any Purpose.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shovels. (Steel, Brass, Aluminum, etc.)**  
Conneaut Shovel Co., The, Conneaut, Ohio.
- Shutters. (Iron.)**  
Boiles Iron & Wire Works, J. E., Detroit, Mich.  
Chesapeake Iron Works, Baltimore, Md.
- Shutters. (Steel Rolling.)**  
Kinross Mfg. Co., Columbus, O.
- Shutters. (Tin Clad.)**  
Victor Mfg. Co., Newburyport, Mass.
- Silos. (Metal.)**  
Dixie Culvert & Metal Co., Atlanta, Ga.
- Skylights and Cornices.**  
Danzon Metal Works, Hagerstown, Md.  
Emporia Cornice & Skylight Works, North Emporia, Va.
- Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.**  
Moeschl-Edwards Corrugating Co., Covington, Ky.
- Slate. (Roofing, Sanitary, Structural, etc.)**  
East Bangor Consl. Slate Co., East Bangor, Pa.  
Genuine Bangor Slate Co., Easton, Pa.  
Johnson, E. J., New York, N. Y.
- Sluice Gates and Appliances.**  
Coldwell-Wilcox Co., Newburgh, N. Y.
- Smokestacks. (Iron and Steel.)**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works, Augusta, Ga.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schofield Iron Works, Macon, Ga.  
Virginia Bridge & Iron Co., Roanoke, Va.
- Soda. (Bicarbonate.)**  
Church & Dwight Co., New York, N. Y.
- South American Trade.**  
El Comercio, New York, N. Y.
- Speed Changes. (Variable.)**  
Moore & White Co., The, Philadelphia, Pa.
- Speed Reducing Transmissions.**  
James Mfg. Co., D. O., Chicago, Ill.
- Spikes. (Railroad.)**  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Newhall Eng. Co., Geo. M., Philadelphia, Pa.
- Spikes. [See Nails and Spikes.]**
- Spiral Stairs.**  
Merritt & Co., Camden, N. J.
- Springs. (Machinery, Railway, Spiral.)**  
Cary Spring Works, New York, N. Y.  
Raymond Mfg. Co., Ltd., Corry, Pa.
- Stamp Mills.**  
McKlenburg Iron Works, Charlotte, N. C.
- Stamps. (Brass, Rubber.)**  
Baltimore Office Supply Co., Baltimore, Md.
- Standpipes.**  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
- Chicago Bridge & Iron Works, Chicago, Ill.**  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Struthers-Wells Co., Warren, Pa.
- Stapling Machinery. (Fruit Package, Basket, etc.)**  
Saranac Machine Co., Benton Harbor, Mich.
- Stationers. (Envelopes, Letter and Bill Heads, etc.)**  
Young & Selden Co., Baltimore, Md.
- Steam Feeds.**  
Soule Steam Feed Works, Meridian, Miss.
- Steam Fitters' Supplies.**  
Oster Mfg. Co., The, Cleveland, Ohio.  
Saunders' Sons, D., Inc., Yonkers, N. Y.
- Steam Heating.**  
Keeler Co., E., Williamsport, Pa.
- Steamship Lines. (Continued.)**  
Baltimore Steam Packet Co., Baltimore, Md.  
Chesapeake Steamship Co., Baltimore, Md.  
Merchants & Miners' Trans. Co., Baltimore, Md.



**Steamship Lines.** (Trans Atlantic.)  
Quard Steamship Co., Ltd., New York, N. Y.

**Steam Shovel Chains.**  
Weimer Chain & Iron Co., Lebanon, Pa.

**Steam Shovels.**  
American Clay Machinery Co., The Bucyrus, Ohio.  
Fairbanks Steam Shovel Co., Marion, O.  
Marion-Osgood Co., Marion, O.  
Sherwood, E. C., New York, N. Y.

**Steam Specialties.**  
Lunkenheimer Co., The Cincinnati, Ohio.  
Powell Co., Wm., Cincinnati, O.

**Steam Traps.**  
Jenkins Bros., New York, N. Y.

**Steel.**  
Carnegie Steel Co., Pittsburgh, Pa.  
Dietrich Bros., Baltimore, Md.  
Gulf States Steel Co., Birmingham, Ala.  
Hendrick Mfg. Co., Carbondale, Pa.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
La Belle Iron Works, Steubenville, O.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Lebanon Valley Iron & Steel Co., Lebanon, Pa.  
Pittsburgh Steel Co., Portsmouth, Ohio.  
Republic Iron & Steel Co., Youngstown, O.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
Union Drawn Steel Co., Beaver Falls, Pa.  
Union Nut Co., The, Cleveland, O.  
Wood Iron & Steel Co., Alan, Philadelphia, Pa.  
Youngstown Sheet & Tube Co., The Youngstown, O.

**Steel (Tool).**  
Bourne-Fuller Co., The, Cleveland, Ohio.  
McKenna Bros., Brass Co., Pittsburgh, Pa.  
Union Drawn Steel Co., Beaver Falls, Pa.

**Steel (Vanadium).**  
Carnegie Steel Co., Pittsburgh, Pa.  
Union Drawn Steel Co., Beaver Falls, Pa.

**Steel Buildings.** (Designers, Builders.)  
Amer. Bridge Co., of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Champion Bridge Co., Wilmington, O.  
Chesapeake Iron Works, Baltimore, Md.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Phoenix Iron Co., Philadelphia, Pa.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Richmond Structural Steel Co., Richmond, Va.  
Schreiber & Sons Co., The, Cincinnati, O.  
Sead Architectural Iron Wks., Louisville, Ky.  
Turner, C. A. P., Minneapolis, Minn.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Steel Castings.**  
Crucible Steel Castings Co., Lansdowne, Pa.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Riverside Steel Casting Co., Newark, N. J.

**Steel Plate Work.**  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Coatesville Boiler Works, Coatesville, Pa.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Memphis Steel Construction Co., Memphis, Tenn.  
Phoenix Iron Co., Philadelphia, Pa.  
Struthers-Weiss Co., Warren, Pa.

**Steel Protector.** (Concrete Curb, Steps, etc.)  
[See Curb Protector Steel.]

**Steel Sheet Piling.**  
Franks, J. E., Atlanta, Ga.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.

**Stencils.**  
Baltimore Office Supply Co., Baltimore, Md.  
Stills. (Turpentine.)  
McMillan Bros., Jacksonville, Fla.

**Stirrups.** (Building.)  
Chesapeake Iron Works, Baltimore, Md.

**Stock Certificates, Bonds and Seals.**  
Baltimore Office Supply Co., Baltimore, Md.

**Stock Room Racks, Bins, Etc.**  
Merritt & Co., Camden, N. J.

**Stokers.** (Hand.)  
Huber Grate Bar & Stoking Co., Baltimore, Md.

**Stokers.** (Mechanical.)  
Babcock & Wilcox Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Stone.** (Building.)  
Bedford Steam Stone Works, Bedford, Ind.  
Kirkpatrick Sand & Cement Co., Birmingham, Ala.

**Stone and Gravel Plants.**  
Weller Mfg. Co., Chicago, Ill.

**Storage Batteries.**  
Elec. Storage Battery Co., The, Philadelphia, Pa.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Strapping Leather.**  
Graton & Knight Mfg. Co., Worcester, Mass.

**Structural Steel and Iron.**  
Amer. Bridge Co., of New York, N. Y.  
Belmont Iron Works, Philadelphia, Pa.  
Bourne-Fuller Co., The, Cleveland, Ohio.  
Carnegie Steel Co., Pittsburgh, Pa.  
Champion Bridge Co., Wilmington, O.  
Chesapeake Iron Works, Baltimore, Md.  
Chickasaw Iron Works, Memphis, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cincinnati Iron & Steel Co., Cincinnati, O.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dietrich Bros., Baltimore, Md.  
East St. Louis Bridge Co., East St. Louis, Ill.  
Easton Car & Construction Co., Easton, Pa.  
Grainger & Co., Louisville, Ky.  
Greenup's Sons Iron & Steel Co., Jos., St. Louis, Mo.  
Hoffman & Co., Inc., R. C., Baltimore, Md.  
Jones & Laughlin Steel Co., Pittsburgh, Pa.  
Lackawanna Steel Co., Lackawanna, N. Y.  
Oregonia Bridge Co., Lebanon, Ohio.  
Memphis Steel Construction Co., Memphis, Tenn.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Republic Iron & Steel Co., Youngstown, O.  
Richmond Structural Steel Co., Richmond, Va.  
Schreiber & Sons Co., The, Cincinnati, O.  
Sead Architectural Iron Works, Louisville, Ky.  
Southern Sheet & Tin Plate Co., Ashland, Ky.  
Savannah Steel Products Co., Savannah, Ga.  
Tennessee Coal, Iron & R. R. Co., Birm'gh'm, Ala.  
Vincennes Bridge Co., Vincennes, Ind.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Stump Pullers.**  
Zimmerman Steel Co., Lone Tree, Iowa.

**Sulphur.**  
Union Sulphur Co., New York, N. Y.

**Super-Heaters.** (Steam.)  
Babcock & Wilcox Co., New York, N. Y.  
Power Specialty Co., New York, N. Y.

**Surfacing Machines.** (For Floors.)  
Wayell Chappell & Co., Chicago, Ill.

**Surveying Instruments.**  
Vebor & Co., Philadelphia, Pa.

**Swinging Engines.**  
Dake Engine Co., Grand Haven, Mich.

**Switchboards, Switches, etc.**  
Fort Wayne Electric Works, Fort Wayne, Ind.  
General Electric Co., Schenectady, N. Y.

**Switchstands.** [See Railroad Frogs and Switches.]

**Tackle Blocks.** (For Wire or Manila Rope.)  
Broderick & Bascom Rope Co., St. Louis, Mo.

**Talc and Soapstone Powders.**  
Georgia Talc Co., Asheville, N. C.

**Tanks.** (Iron and Steel.)  
American Bridge Co., New York, N. Y.  
American Water Softener Co., Philadelphia, Pa.  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Casey-Hedges Co., Chattanooga, Tenn.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Coatesville Boiler Works, Coatesville, Pa.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Dixie Culvert & Metal Co., Atlanta, Ga.  
Harry Bros. Co., Newport, Ky.  
Hartley Boiler Works, Montgomery, Ala.  
Hendricks Mfg. Co., Carbondale, Pa.  
Kester Co., E., Williamsport, Pa.  
Keystone Boiler & Foundry Co., Columbia, Pa.  
Lombard Iron Works, Augusta, Ga.  
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.  
Memphis Steel Construction Co., Memphis, Tenn.  
New Orleans Roofing & Metal Wks., New Orleans, La.  
New York Central Iron Wks. Co., Hagerstown, Md.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.  
Schofield Iron Works, Macon, Ga.  
Struthers-Weiss Co., Warren, Pa.  
Sydnor Pump & Well Co., Inc., Richmond, Va.  
Tennessee Metal Culvert Co., Nashville, Tenn.  
Twin City Boiler Works, Bristol, Va.-Tenn.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Walsh & Weidner Boiler Co., Chattanooga, Tenn.

**Tanks.** (Wood.)  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Davis & Son, G. M., Palatka, Fla.  
Sydnor Pump & Well Co., Inc., Richmond, Va.

**Tapes.** (Measuring.)  
Lufkin Rule Co., Saginaw, Mich.  
Starrett Co., L. S., Athol, Mass.

**Telephones.** (Supplies, Equipment.)  
Piedmont Electric Co., Asheville, N. C.  
Western Electric Co., New York, N. Y.

**Telephone Service.**  
American Telephone & Telegraph Co.

**Terra-Cotta.** (Ornamental.)  
Atlanta Terra-Cotta Co., Atlanta, Ga.  
Maryland Terra-Cotta Co., Baltimore, Md.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Southern Building Material Co., Norfolk, Va.  
Stevens' Sons Co., H., Macon, Ga.

**Threshers.**  
Cardwell Machine Co., Richmond, Va.

**Tiering Machines.** (Portable.)  
Economy Engineering Co., Chicago, Ill.

**Tile.** (Drain.)  
Gray Concrete Co., Thomasville, N. C.  
Gooner Brick & Tile Co., Milledgeville, Ga.

**Tile (Interior)**  
Amer. Enam. Brick & Tile Co., New York, N. Y.  
P & F Tile Co., Birmingham, Ala.

**Tile.** (Mantel and Promenade.)  
Hood Brick Co., B. Miffin, Atlanta, Ga.

**Tile.** (Rubber.)  
Goodyear Tire & Rubber Co., Akron, O.

**Tile (Structural)**  
Gooner Brick & Tile Co., Milledgeville, Ga.

**Timbers.** (Crosotied.)  
American Crosotie Works, New Orleans, La.  
Republic Crosotie Co., Indianapolis, Ind.

**Tin and Tarn Plates.**  
American Sheet & Tin Plate Co., Pittsburgh, Pa.

**Tires.** (Rubber.)  
Goodyear Tire & Rubber Co., Akron, O.

**Tobacco Machinery.**  
Huckey Iron & Brass Works, Dayton, O.  
Cardwell Machine Co., Richmond, Va.

**Toilet Flushing Device.**  
Duffy & Sons Co., M. J., Louisville, Ky.

**Tools.** (Machinists.)  
American Die & Tool Co., Reading, Pa.  
Holland Mfg. Co., Erie, Pa.  
Morse Twist Drill & Mch. Co., New Bedford, Mass.

**Tools.** (Mechanical.)  
Starrett Co., L. S., Athol, Mass.

**Tools.** (Pneumatic.)  
Amer. Compressor & Pump Co., Baltimore, Md.  
Chicago Pneumatic Tool Co., Chicago, Ill.  
Independent Pneumatic Tool Co., Chicago, Ill.

**Tools.** (Tinners.)  
Danzon Metal Works, Hagerstown, Md.

**Torches.**  
Wall Mfg. Supply Co., P., Allegheny, Pa.

**Towers.** (Electric Transmission.)  
American Bridge Co., of New York, N. Y.  
Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

**Towers.** (Steel and Wood.)  
Caldwell & Co., Inc., W. E., Louisville, Ky.  
Chattanooga Boiler & Tank Co., Chattanooga, Tenn.  
Chicago Bridge & Iron Works, Chicago, Ill.  
Cole Mfg. Co., R. D., Newnan, Ga.  
Columbia Pump & Well Co., Washington, D. C.  
Des Moines Bridge & Iron Co., Des Moines, Ia.  
Memphis Steel Const. Co., Memphis, Tenn.  
Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

**Track Material.** (Steam & Industrial Railroads.)  
Conley Frog & Switch Co., Memphis, Tenn.

**Traction Engines.**  
Fairbanks-Morse & Co., Atlanta, Ga.  
Heer Engine Co., Portsmouth, O.  
Holt Mfg. Co., The, Peoria, Ill.  
Huber Mfg. Co., The, Marion, O.

**Tramway.** (Overhead.)  
Consolidated Tramway Co., New York, N. Y.  
See also J. G., Reading, Pa.

**Tramways.** (Portable.)  
Consolidated Tramway Co., New York, N. Y.

**Tramway.** (Wire Rope.)  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell & Sons Co., H. W., Chicago, Ill.  
Consolidated Tramway Co., New York, N. Y.  
Link-Belt Co., Nictown (Philadelphia), Pa.  
Waterbury Co., New York, N. Y.

**Transformers.**  
Crocker-Wheeler Co., Ampere, N. J.

**Translation.**  
El Comercio, New York, N. Y.

**Trench Excavator.** [See Excavator (Trench).]

**Trucks.** (Dry Kiln.)  
Moore Dry Kiln Co., L., Jacksonville, Fla.

**Trucks.** (Elevating for Factories, etc.)  
National Scale Co., Chicago Falls, Mass.

**Trucks.** (Motor, Gasoline.)  
White Co., The, Cleveland, O.

**Trucks.** (Platform, Freight, Mill, Factory, etc.)  
Bernstein Mfg. Co., Phila., Pa.  
Chase Fdry. & Mfg. Co., Columbus, O.

**Trucks.** (Storage Battery auto.)  
Westinghouse Machine Co., Pittsburgh, Pa.

**Trucks.** (Storage Battery) [For Warehouses & Industrial Plants]  
Edwell Parker Electric Co., The, New York, N. Y.

**Trust Companies.** [See Bankers and Brokers.]

**Tube Well Strainers.**  
Cook Well Co., St. Louis, Mo.

**Tubes.** (Boiler.)  
Cincinnati Iron & Steel Co., Cincinnati, O.  
National Tube Co., Pittsburgh, Pa.

**Tubing.**  
La Belle Iron Works, Steubenville, O.  
National Tube Co., Pittsburgh, Pa.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Turbines.** (Hydraulic.)  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Davis Foundry & Machine Wks., Rome, Ga.  
Leffel & Co., James, Springfield, O.  
Pools Engineering & Mach. Co., Baltimore, Md.  
Salem Foundry & Machine Wks., Salem, Va.  
Smith Co., S. Morgan, York, Pa.

**Turbines.** (Steam.)  
Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
De Laval Steam Turbine Co., Trenton, N. J.  
E. L. Wayne Electric Works, Ft. Wayne, Ind.  
General Electric Co., Schenectady, N. Y.  
Sturtevant Co., R. F., Hyde Park, Boston, Mass.  
Terry Steam Turbine Co., Hartford, Conn.  
Western Electric Co., New York, N. Y.  
Westinghouse Machine Co., Pittsburgh, Pa.

**Washers.** (Ore and Phosphate.)  
Bailey-Lobby Co., Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

**Washers and Rivets.** [See Bolts, Nuts, Rivets, Studs and Washers.]

**Watchman's Clocks.**  
Watchman's Clock & Supply Co., New York, N. Y.

**Water Filters.** (See Filters, Water, etc.)

**Waterproofing.** (For Brick Work.)  
Barrett Mfg. Co., Philadelphia, Pa.  
McCormick Waterproof Portland Cement Co., St. Louis, Mo.  
Standard Paint Co., The, New York, N. Y.

**Waterproofing.** (For Concrete.)  
Barrett Mfg. Co., Philadelphia, Pa.  
McCormick Waterproof Portland Cement Co., St. Louis, Mo.  
Standard Paint Co., The, New York, N. Y.

**Water-Softening Apparatus.** (Purifying.)  
American Water Softener Co., Philadelphia, Pa.  
International Filter Co., Chicago, Ill.  
N. Y. Cont. Jewell Filtr'n Co., New York, N. Y.  
Tucker & Laxon, Charlotte, N. C.

**Water-Wheels.** [See Turbines, (Hydraulic).]

**Water-Works Supplies and Appliances.**  
American Cast Iron Pipe Co., Birmingham, Ala.  
American Pipe & Constr. Co., Philadelphia, Pa.  
Bourbon Copper & Brass Wks. Co., Cincinnati, O.  
Clark Co., H. W., Mattoon, Ill.  
Clow & Sons, James B., Chicago, Ill.  
Coldwell-Wilcox Co., Newburgh, N. Y.  
Columbian Iron Works, Chattanooga, Tenn.  
Donaldson Pipe & Foundry Co., Lynchburg, Va.  
Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Keystone Pump & Well Engine Co., Lynchburg, Va.  
Layne & Bowler Co., Houston, Tex.  
Leadite Co., Inc., The, Philadelphia, Pa.  
Lynchburg Foundry Co., Lynchburg, Va.  
Massillon Iron & Steel Co., Massillon, Ohio.  
Pomona Terra-Cotta Co., Pomona, N. C.  
Salem Fdry. & Machine Works, Salem, Va.  
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.  
Standard Spiral Pipe Works, Chicago, Ill.  
Stevens' Sons Co., H., Macon, Ga.  
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.  
Warren Foundry & Machine Co., New York, N. Y.  
Washington Co., A. H., Charlotte, N. C.  
Wood & Co., R. D., Philadelphia, Pa.

**Welding.** (Oxy-Acetylene Process.)  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

**Welding Plants.** (Oxy-Acetylene.)  
Milburn Co., Alex. N., Baltimore, Md.

**Welding Apparatus.** (Oxy-Acetylene Process.)  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

**Welding Supplies.**  
Prest-O-Lite Co., Inc., The, Indianapolis, Ind.

**Well Contractors.** (Oil, Artesian, etc.)  
Columbia Pump & Well Co., Washington, D. C.  
Cook Well Co., The, St. Louis, Mo.  
Hughes Specialty Well Drill Co., Charleston, S. C.  
Lee Bros. & Greer, Spartanburg, S. C.  
Stodhoff Bros., Flemington, N. J.  
Sydnor Pump & Well Co., Inc., Richmond, Va.

**Well Tools and Supplies.**  
Cook Well Co., The, St. Louis, Mo.  
Keystone Pump & Well Engine Co., Beaver Falls, Pa.  
Williams Bros., Ithaca, N. Y.

**Wheels and Axles.**  
Electric Wheel Co., Quincy, Ill.  
Oliver Mfg. Co., W. J., Knoxville, Tenn.

**Wheelbarrows and Carts.**  
Sterling Wheelbarrow Co., Milwaukee, Wis.  
Syracuse Chilled Plow Co., Syracuse, N. Y.

**Wheels.** (Steel and Steel Tired.)  
Carnegie Steel Co., Pittsburgh, Pa.

**Window Frames and Sash.** (Fireproof.)  
Detroit Steel Products Co., Detroit, Mich.  
Edwards Mfg. Co., The, Cincinnati, O.  
Moeschl-Edwards Corrugating Co., Covington, Ky.  
Trussed Concrete Steel Co., Youngstown, O.  
Voigtman & Co., Chicago, Ill.

**Window Guards.** (Wire.) [See Wire Goods.]

**Windmills.**  
Caldwell Co., Inc., W. E., Louisville, Ky.  
Columbia Pump & Well Co., Washington, D. C.

**Wire.** (Barbed Wire, etc.)  
Roebing's Sons Co., John A., Trenton, N. J.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Wire.** (Galvanized and Annealed.)  
Gulf States Steel Co., Birmingham, Ala.

**Wire.** (Galvanized Telephone.)  
Gulf States Steel Co., Birmingham, Ala.

**Wire.** (Plain Steel, Hoop, etc.)  
Gulf States Steel Co., Birmingham, Ala.

**Wire.** (Signal.)  
American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.

**Wire Cloth.** (Iron, Steel, Brass, etc.)  
Aronstam Co., L., Columbia, S. C.  
Caldwell & Sons Co., The, H. W., Chicago, Ill.  
Meyers Mfg. Co., The, Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Goods.**  
Bollies Iron & Wire Wks., J. E., Detroit, Mich.  
Cincinnati Mfg. Co., Cincinnati, O.  
Dow Wire & Iron Works, Louisville, Ky.  
Dufur & Co., Baltimore, Md.  
Dufur, Daggett & Co., Baltimore, Md.  
Meyers Mfg. Co., The, Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Netting.**  
American Steel & Wire Co., Chicago, Ill.  
New Jersey Wire Cloth Co., Trenton, N. J.

**Wire Rope.**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Roebing's Sons Co., John A., Trenton, N. J.  
Waterbury Co., New York, N. Y.  
Youngstown Sheet & Tube Co., Youngstown, O.

**Wire Rope Clips.**  
American Hoist & Derrick Co., St. Paul, Minn.  
American Steel & Wire Co., Chicago, Ill.  
Broderick & Bascom Rope Co., St. Louis, Mo.

**Wires and Cables.** (Insulated.)  
American Steel & Wire Co., Chicago, Ill.  
Safety Insulated Wire & Cable Co., New York, N. Y.

**Wood Blocks.** (For Paving and Factory Floors.)  
U. S. Wood Preserving Co., New York, N. Y.

**Wood Distillation.**  
Struthers-Weiss Co., Warren, Pa.

**Wood Pipe.** (For Water, etc.)  
Wyckoff & Son Co., A., Elmira, N. Y.

**Wood (Preservative).**  
Barrett Mfg. Co., Phila., Pa.

**Woodworking Machinery.**  
Gibbs Mach. Co., Inc., Columbia, S. C.  
Kline, Lewis T., Alpena, Mich.  
Lane Mfg. Co., Montpelier, Vt.  
Shimer & Sons, Samuel J., Milton, Pa.  
Sidney Tool Co., The, Sidney, Ohio.  
Smith Machine Co., H. B., Smithville, N. J.

**Yarn.** (Tanned Seal.)  
Columbian Rope Co., Auburn, N. Y.  
Plymouth Cordage Co., North Plymouth, Mass.

## Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.  
Advertising copy not requiring proof must reach us one week in advance of publication day.  
When proof is required, two weeks in advance.  
Width of column, 2½ inches; length, 13 inches.  
Four columns to page.

### TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.  
Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Allen Knitting Machine & Sewing Co., Inc.	1	Chesapeake Heating Co., Inc.	14	Freese & Co., E. M.	31	Knight Mfg. Co., Inc.	18	P. & F. Tile Co., Inc.	28	Standard Spiral Pipe Works	107
Albany Lubricating Co., Inc.	73	Chesapeake Roofing & Pipe Co., Inc.	25	French Oil Mill Mch. Co.	34	Knowles, Morris	18	Pacific Plank & Fence Co.	107	Starr Co., B. F.	107
Albergo Pump & Condenser Co.	27	Covering Co., Inc.	27	Franklin & Robertson	18	Komoro Portland Cement Co., Inc.	24	Patten Mfg. Co., The	28	Stedman's Forge & Mch. Co.	28
Allen American Manganese Steel Co. Eductor Iron Works	27	Chesapeake Steamship Co.	107	Fuller-Coult Co.	19	Lacy & Bowler Co., Inc.	18	Paulson, Linkmarr & Co.	61	Steel Protected Concrete Co.	28
Aling Engineering Co., J. R.	92	Chicago Bridge & Iron Works	107	Gade Excavating Co.	81	La Belle Iron Works	86	Paxon Co., J. W.	61	Steel Rail Supply Co.	61
Aluminum Co. of America	27	Chicago Pneumatic Tool Co.	24	Gallatin Iron Works	25	Lackawanna Steel Co.	63	Payne W. A.	21	Steele & Sons, J. C.	21
American Blower Co.	27	Chickamauga Quarry & Const. Co.	27	Gallatin Iron Works	25	Laclede Steel Co.	25	Penn Metal Co.	30	Stirling Wheeling Co.	30
American Bridge Co. of New York	24	Church & Dwight Co.	27	Gale Signal Oil & Mfg. Co.	81	Laidlaw-Dunn-Gordon Co.	25	Perkins Engr. Co., Edmund T.	18	Stevens' Sons & Co., H.	18
American Cast Iron Pipe Co.	87	Cincinnati Frog & Switch Co.	75	Gandy Belting Co.	14	Lane Mfg. Co.	90	Phannmueller Engineering Company	71	Stewart Heater Co., The	71
American Compressor & Pump Co.	77	Cincinnati Mfg. Co.	75	General Electric Co.	6	Larpe & Bowler Co., Inc.	90	Phoenix Iron Works Co.	91	Stone & Webster Eng. Corp.	91
American Cotton Oil Co.	34	Clark, C. H. W.	27	General Malleable Co.	91	Lebanon Valley Iron & Steel Co.	91	Pickering Governor Co.	5	Strickland, J. D.	5
American Crocote Works	13	Classified Opportunities	66	General Valve Co.	37	Lehigh Portland Cement Co.	21	Piedmont Electric Co.	73	Struthers-Wellis Co.	73
American Electric Mch. & Elevator Co.	28	Claremont, N. H.	67	Genieue Bangor Late Co.	74	Lehigh Portland Cement Co.	21	Pittsburgh-De Moines Steel Co.	12	Stuebner Iron Works, G. L.	12
American Frog & Switch Co.	75	Cleveland Belting & Mch. Co.	67	Georgia Talc Co.	38	Lehigh Portland Cement Co.	21	Pittsburgh Valve Fdy. & Constr.	19	Sunderland, J. D.	19
American Machine Co.	17	Climax Mfg. Co.	76	Gierlach Co., Peter	25	Lehigh Portland Cement Co.	21	Plymouth Cordage Co.	15	Summers & Co., L. L.	15
Amer. Pipe & Constr. Co.	89	Clinchfield Coal Corp.	2	Gibbes Machinery Co., Inc.	22	Lehigh Portland Cement Co.	21	Pomona Terra-Cotta Co.	87	Sweet's Steel Co.	87
American Process Co.	92	Clinchfield Fuel Co.	2	Gilman, L. Harry	19	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Synron Pump & Well Co., Inc.	26
Amer. Sheet & Tin Plate Co.	30	Clinchfield Portland Cement Corp.	80	Golden's Fdry. & Mch. Co.	10	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Syracuse Chilled Plow Co.	26
American Shipbuilding Co.	79	Columbia Pump & Well Co.	40	Goodyear Tire & Rubber Co.	64	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Tampa Mch. Exchange	26
American Steel & Wire Co. of Providence, R. I.	35	Columbian Rope Co.	14	Grain Bros.	74	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Tenn. Coal, Iron & R. R. Co.	26
American Telephone & Telegraph Co.	18	Columbia Steel Casting Co.	83	Granger & Co., Inc.	89	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Tenn. Coal, Iron & R. R. Co.	26
American Water Softener Co.	18	Conley Frog & Switch Co.	75	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Terr Steam Turbine Co., The	26
Anderson & Christie	18	Consolidated Iron & Metal Co.	74	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Thomas Grate Bar Co.	26
Armco Culvert Publicity Bureau	18	Consolidated Tramway Co.	74	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Titus, E. E.	26
Arnstam Co., Inc.	84	Continental Fibre Co.	7	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Toomey, Inc., Frank	26
Arnstam Sand & Gravel Co.	84	Continental Gin Co.	7	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Triumph Electric Co.	26
Asbestos Protected Metal Co.	26	Continental Iron & Steel Co.	75	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Troy Wagon Works	26
Asphalt Ready Roofing Co.	72	Contractors Service Co.	75	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Trussed Concrete Steel Co.	26
Atlanta, Birmingham & Atlantic R. R.	83	Converser, F. S., Inc.	90	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Tucker & Laxton	26
Atlanta Terra Cotta Co.	28	Cook Well Co.	90	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26	Turner C. A. P.	26
Atlanta & West Point R. R.	17	Copeland-Ingle Shale Brick Co.	84	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26		
Atlas Metal Works	84	Cortright Metal Roofing Co.	29	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26		
Atlas Powder Co.	7	Courtright Metal Roofing Co.	29	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26		
Austin Mfg. Co.	74	Courtright Metal Roofing Co.	29	Griffin & Wedge Co., The	5	Lehigh Portland Cement Co.	21	Porter Co., H. K.	26		
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Advs. marked † appear in first issue of the  
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## Classified Opportunities

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### Proposals' Advertisements

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